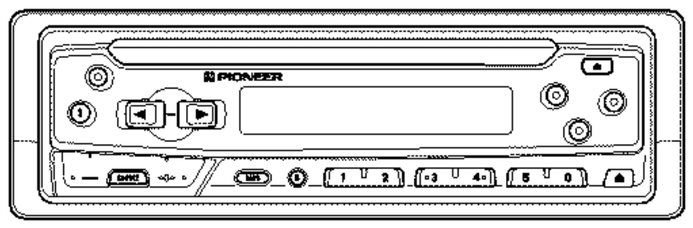
Service Manual

PIONEER®
The Art of Entertainment

DEH-345R/X1M/EW



ORDER NO.
CRT2103

HIGH POWER CD PLAYER WITH RDS TUNER

DEH-345R X1M/EW
DEH-344R X1M/EW
DEH-343R X1M/GR

COMPACT disc DIGITAL AUDIO

- **See the separate manual CX-597(CRT1829) for the CD mechanism description, disassembly and circuit description.**
- **The CD mechanism employed in this model is one of S7 series.**

CONTENTS

1. SAFETY INFORMATION 2
2. EXPLODED VIEWS AND PARTS LIST 4
3. SCHEMATIC DIAGRAM 14
4. PCB CONNECTION DIAGRAM 36
5. ELECTRICAL PARTS LIST 46
6. ADJUSTMENT.....55
7. GENERAL INFORMATION 61
   7.1 PARTS 61
      7.1.1 IC.....61
      7.1.2 DISPLAY 68
   7.2 DIAGNOSIS 69
      7.2.1 DISASSEMBLY 69
      7.2.2 TEST MODE 70
   7.3 BLOCK DIAGRAM 72
8. OPERATIONS AND SPECIFICATIONS.....74

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Lane Crawford Place, Singapore 0923

© **PIONEER ELECTRONIC CORPORATION 1997**

K-FEA. OCT. 1997 Printed in Belgium

ClibPDF - www.fastio.com

● **CD Player Service Precautions**

1. For pickup unit(CXX1230) handling, please refer to"Disassembly"(CX-597 Service Manual CRT1829). During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the service pickup unit(see page 59).

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

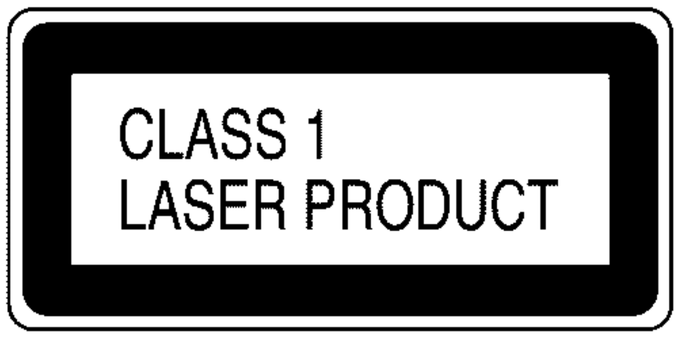
1. Safety Precautions for those who Service this Unit.

- **When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

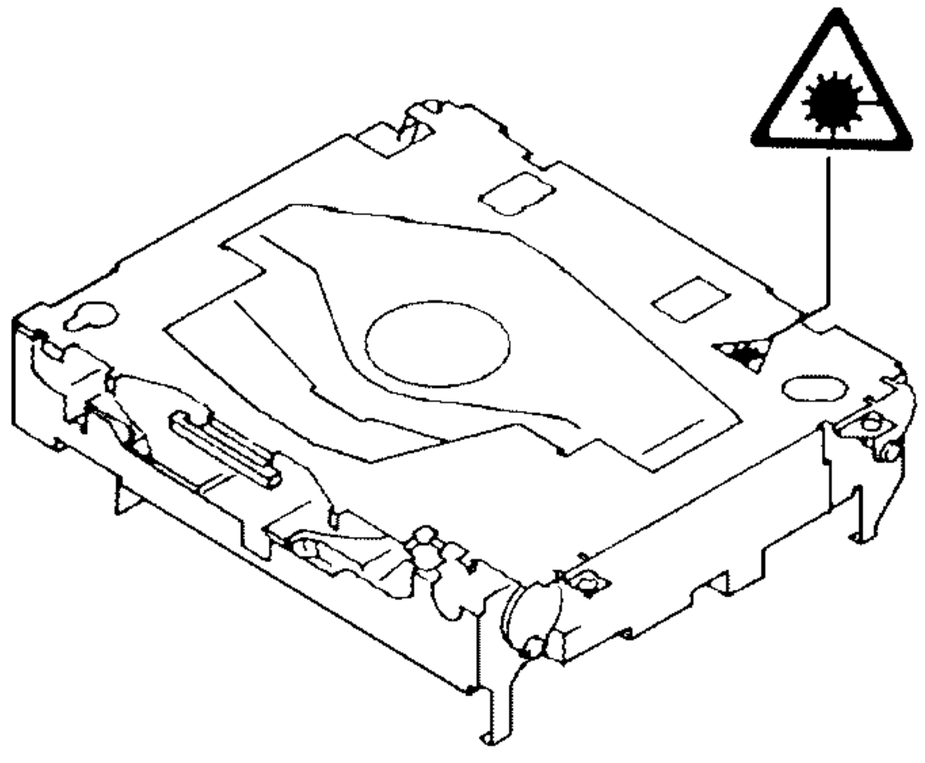
Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. A "CLASS 1 LASER PRODUCT" label is affixed to the rear of the player.



3. The triangular label is attached to the mechanism unit frame.



4. Specifications of Laser Diode

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

ClibPDF - www.fastio.com

ClibPDF - www.fastio.com

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

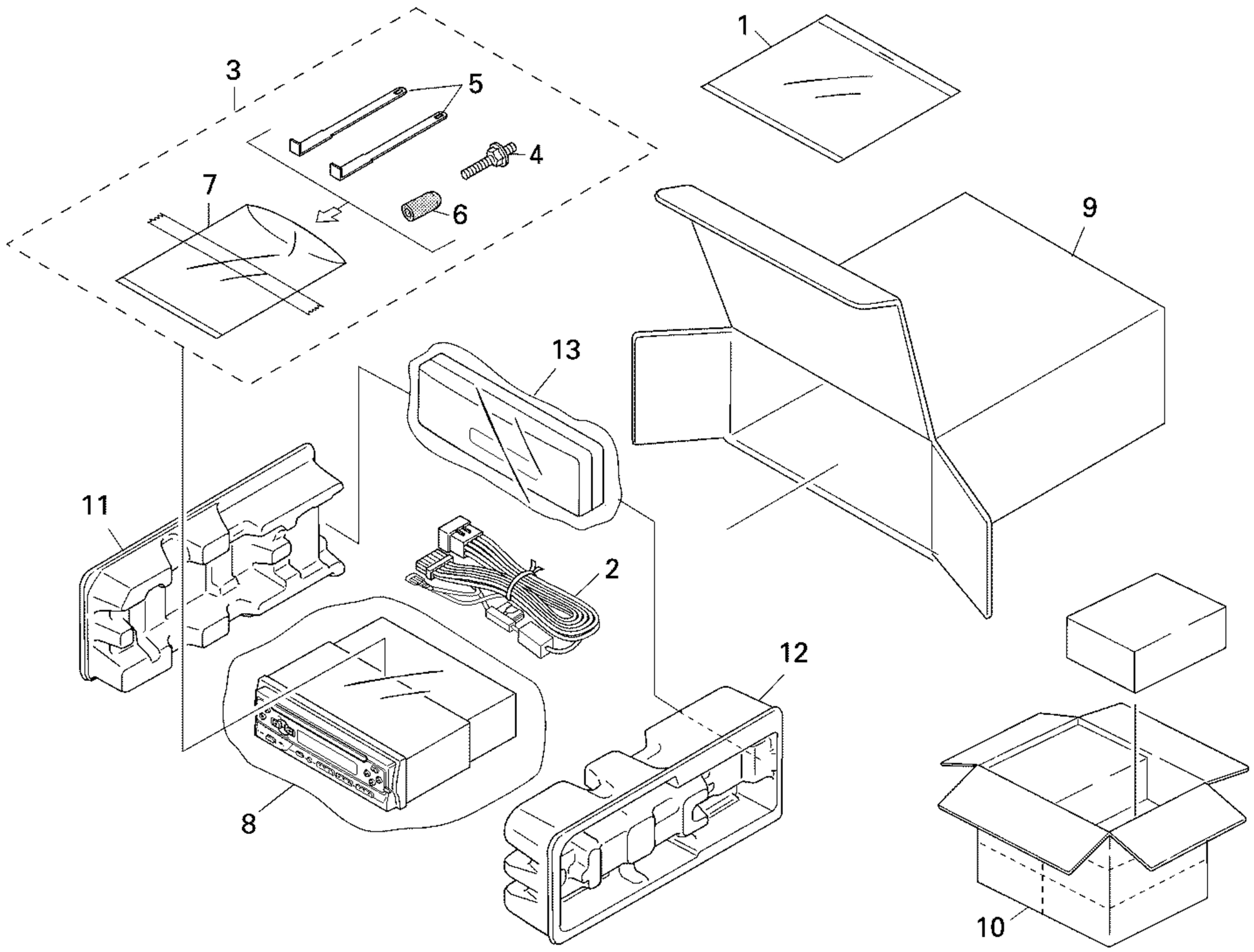


Fig. 1

ClibPDF - www.fastio.com

NOTE:

- Parts marked by "*"are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1-1	Polyethylene Bag	CEG1116
	1-2	Owner's Manual (DEH-345R/X1M/EW)	CRD2485
		Owner's Manual (DEH-344R/X1M/EW)	CRD2486
		Owner's Manual (DEH-343R/X1M/GR)	CRB1405
	1-3	Owner's Manual (DEH-345R/X1M/EW) (DEH-344R/X1M/EW)	CRD2487
	1-4	Owner's Manual (DEH-345R/X1M/EW) (DEH-344R/X1M/EW)	CRD2488
		Installation Manual (DEH-345R/X1M/EW) (DEH-344R/X1M/EW)	CRB1406
		Installation Manual (DEH-343R/X1M/GR)	
*	1-5	Passport	CRY1013
*	1-6	Warranty Card	CRY1087
	2	Cord Assy	CDE5488
	3	Accessory Assy	CEA1917
	4	Screw	CBA1304
	5	Handle	CNC5395
	6	Bushing	CNV3930
*	7	Polyethylene Bag	E36-615
	8	Polyethylene Bag	CEG-162
	9	Carton(DEH-345R/X1M/EW)	CHG3380
		Carton(DEH-344R/X1M/EW)	CHG3381
		Carton(DEH-343R/X1M/GR)	CHG3385
	10	Contain Box (DEH-345R/X1M/EW)	CHL3380
		Contain Box (DEH-344R/X1M/EW)	CHL3381
		Contain Box (DEH-343R/X1M/GR)	CHL3385
	11	Protector	CHP1768
	12	Protector	CHP1769
	13	Case Assy	CXB1063

● Owner's Manual

Model	Part No.	Language
DEH-345R/X1M/EW DEH-344R/X1M/EW	CRD2485	English, Spanish
	CRD2486	German, French
	CRD2487	Italian, Dutch
DEH-343R/X1M/GR	CRB1405	German

● Installation Manual

Model	Part No.	Language
DEH-345R/X1M/EW, DEH-344R/X1M/EW	CRD2488	English, Spanish, German, French, Italian, Dutch
DEH-343R/X1M/GR	CRB1406	German

ClibPDF - www.fastio.com

2.2 EXTERIOR

● DEH-345R/X1M/EW

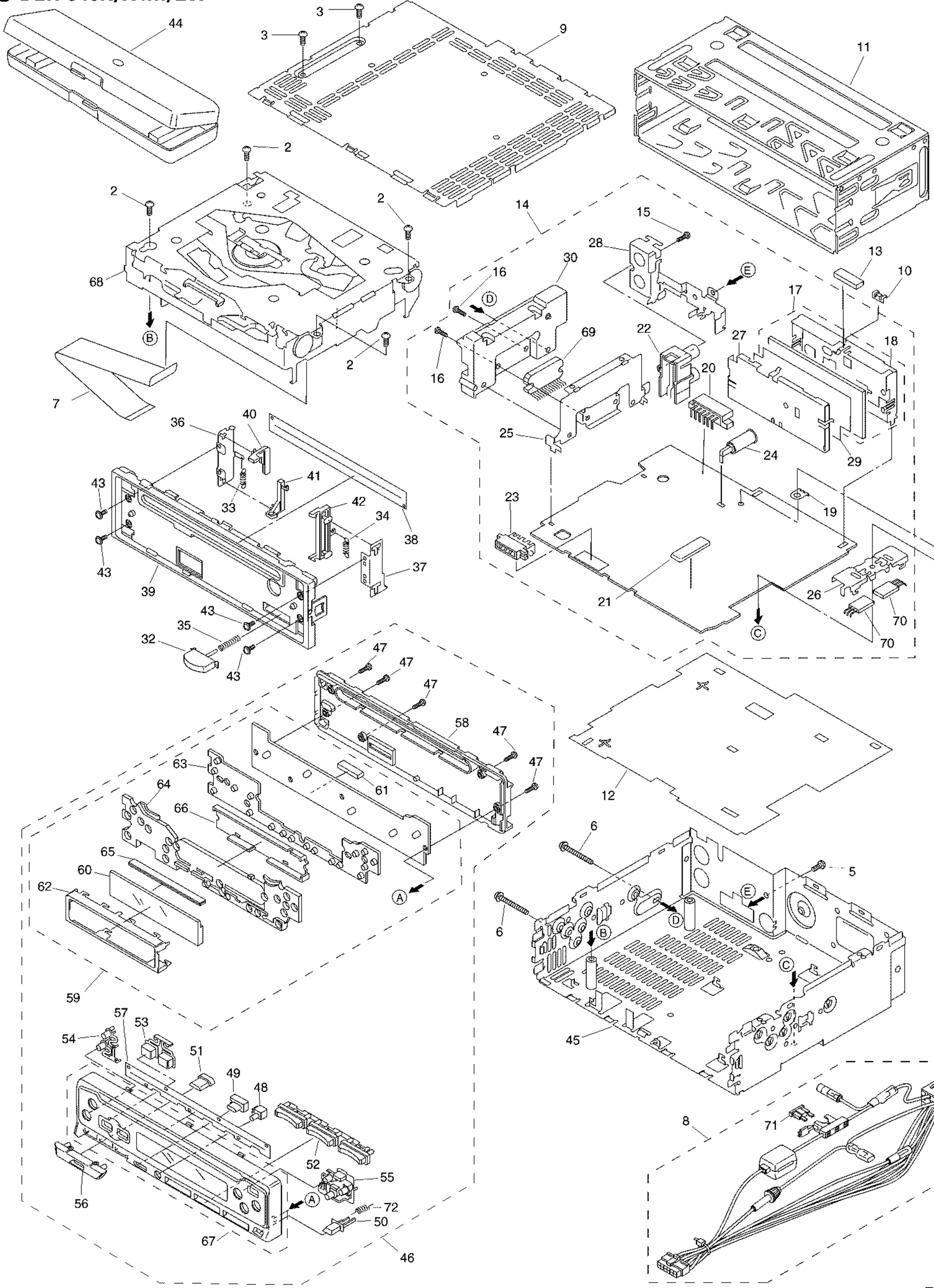


Fig. 2

ClibPDF - www.fastio.com

● EXTERIOR SECTION PARTS LIST

● DEH-345R/X1M/EW

Mark No.	Description	Part No.
1	Screw	ASZ26P080FMC
2	Screw	BSZ26P050FMC
3	Screw	BSZ30P050FMC
4	Screw	BSZ30P055FUC
5	Screw	BSZ30P060FMC
6	Screw	BSZ30P160FMC
7	Cable	CDE4869
8	Cord Assy	CDE5488
9	Case	CNB1989
10	Holder	CNC6469
11	Holder	CNC6798
12	Insulator	CNM5067
13	Cushion	CNM5210
14	Tuner Amp Unit	CWM5562
15	Screw	BPZ26P120FMC
16	Screw	BSZ26P120FMC
17	FM/AM Tuner Unit	CWE1466
18	Holder	CNC6554
19	Terminal(CN503)	CKF1059
20	Plug(CN951)	CKM1225
21	Connector(CN681)	CKS2228
22	Connector(CN421)	CKS3357
23	Connector(CN651)	CKS3581
24	Antenna Jack(CN501)	CKX1056
25	Holder	CNC6131
26	Holder	CNC6132
27	Holder	CNC6356
28	Holder	CNC7360
29	Insulator	CNM4684
30	Heat Sink	CNR1407
31	·····	
32	Button	CAC4836
33	Spring	CBH1834
34	Spring	CBH1835
35	Spring	CBH1996
36	Bracket	CNC6135
37	Bracket	CNC6791
38	Cover	CNM4875
39	Panel	CNS4210
40	Arm	CNV4692
41	Arm	CNV4693
42	Arm	CNV4728
43	Screw	IMS20P030FZK
44	Case Assy	CXB1063
45	Chassis Unit	CXB1779

Mark No.	Description	Part No.
46	Detach Grille Assy	CXB1792
47	Screw	BPZ20P100FZK
48	Button(BSM)	CAC4906
49	Button(BAND)	CAC4907
50	Button(DETACH)	CAC4908
51	Button(SOURCE)	CAC5346
52	Button(1-6)	CAC5347
53	Button(TRACK UP DOWN)	CAC5529
54	Button(LOC,CLOCK)	CAC5530
55	Button(EJECT)	CAC5531
56	Button(+ –)	CAC5533
57	Cover	CNM4704
58	Cover	CNS4203
59	Keyboard Unit	CWM5571
60	LCD(LCD1801)	CAW1453
61	Connector(CN1801)	CKS3580
62	Holder	CNC6872
63	Contact Rubber	CNV5116
64	Lighting Conductor	CNV5119
65	Connector	CNV5149
66	Housing	CNV5171
67	Grille Unit	CXB2092
68	CD Mechanism Module	CXK5003
69	IC(IC551)	TDA7384A
70	Transistor(Q981,991)	2SD2396
71	Fuse(10A)	CEK1136
72	Spring	CBH2103

ClibPDF - www.fastio.com

● DEH-344R/X1M/EW

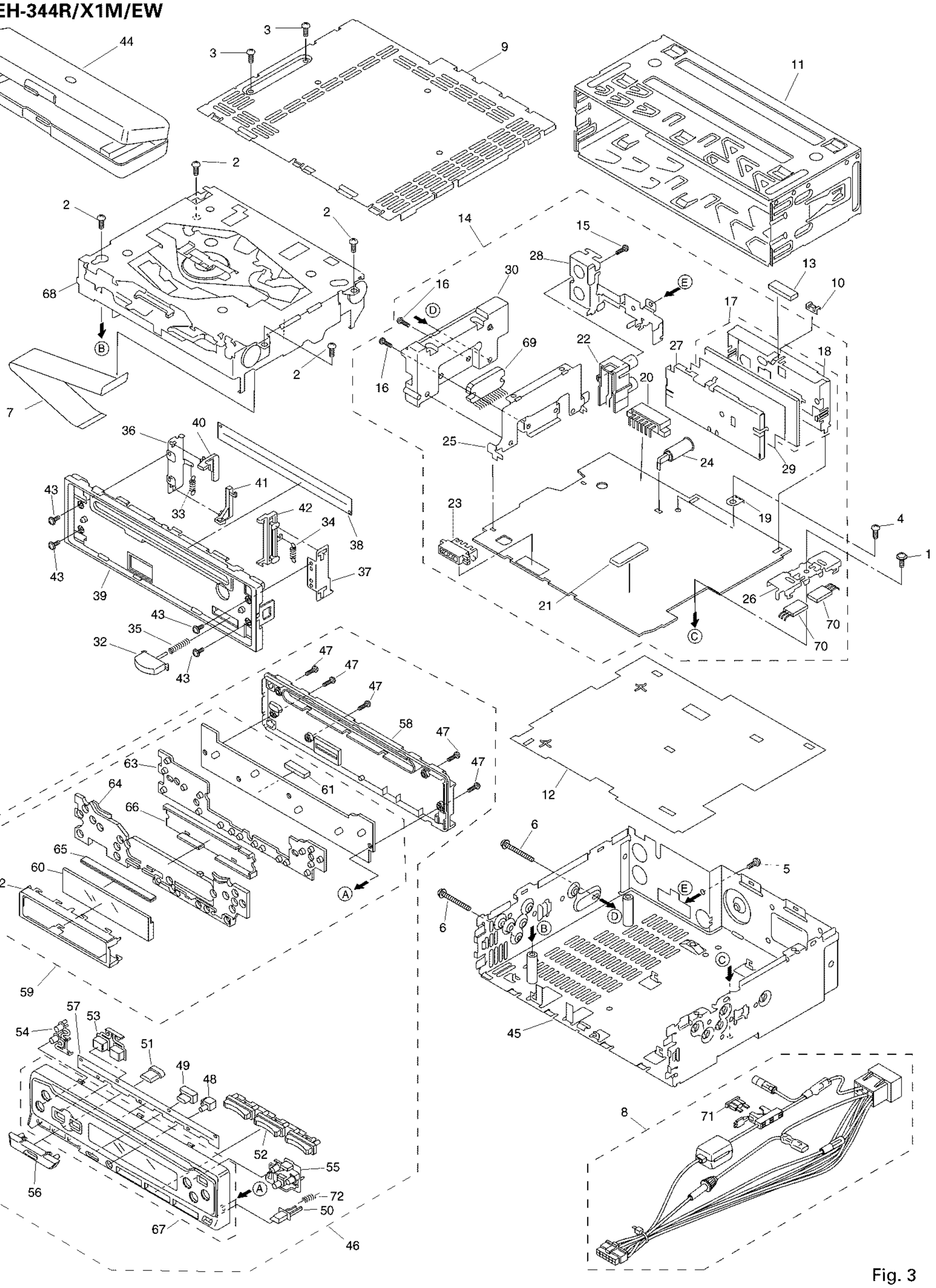


Fig. 3

ClibPDF - www.fastio.com

● EXTERIOR SECTION PARTS LIST

● DEH-344R/X1M/EW

Mark No.	Description	Part No.
1	Screw	ASZ26P080FMC
2	Screw	BSZ26P050FMC
3	Screw	BSZ30P050FMC
4	Screw	BSZ30P055FUC
5	Screw	BSZ30P060FMC
6	Screw	BSZ30P160FMC
7	Cable	CDE4869
8	Cord Assy	CDE5488
9	Case	CNB1989
10	Holder	CNC6469
11	Holder	CNC6798
12	Insulator	CNM5067
13	Cushion	CNM5210
14	Tuner Amp Unit	CWM5562
15	Screw	BPZ26P120FMC
16	Screw	BSZ26P120FMC
17	FM/AM Tuner Unit	CWE1466
18	Holder	CNC6554
19	Terminal(CN503)	CKF1059
20	Plug(CN951)	CKM1225
21	Connector(CN681)	CKS2228
22	Connector(CN421)	CKS3357
23	Connector(CN651)	CKS3581
24	Antenna Jack(CN501)	CKX1056
25	Holder	CNC6131
26	Holder	CNC6132
27	Holder	CNC6356
28	Holder	CNC7360
29	Insulator	CNM4684
30	Heat Sink	CNR1407
31	·····	
32	Button	CAC4836
33	Spring	CBH1834
34	Spring	CBH1835
35	Spring	CBH1996
36	Bracket	CNC6135
37	Bracket	CNC6791
38	Cover	CNM4875
39	Panel	CNS4265
40	Arm	CNV4692
41	Arm	CNV4693
42	Arm	CNV4728
43	Screw	IMS20P030FZK
44	Case Assy	CXB1063
45	Chassis Unit	CXB1826

Mark No.	Description	Part No.
46	Detach Grille Assy	CXB1793
47	Screw	BPZ20P100FZK
48	Button(BSM)	CAC4906
49	Button(BAND)	CAC4907
50	Button(DETACH)	CAC4913
51	Button(SOURCE)	CAC5346
52	Button(1-6)	CAC5348
53	Button(TRACK UP DOWN)	CAC5413
54	Button(LOC,CLOCK)	CAC5414
55	Button(EJECT)	CAC5415
56	Button(+ –)	CAC5350
57	Cover	CNM4704
58	Cover	CNS4264
59	Keyboard Unit	CWM5572
60	LCD(LCD1801)	CAW1453
61	Connector(CN1801)	CKS3580
62	Holder	CNC6872
63	Contact Rubber	CNV5116
64	Lighting Conductor	CNV5119
65	Connector	CNV5149
66	Housing	CNV5171
67	Grille Unit	CXB2093
68	CD Mechanism Module	CXK5003
69	IC(IC551)	TDA7384A
70	Transistor(Q981,991)	2SD2396
71	Fuse(10A)	CEK1136
72	Spring	CBH2103

ClibPDF - www.fastio.com

DEH-345R,344R,343R

● DEH-343R/X1M/GR

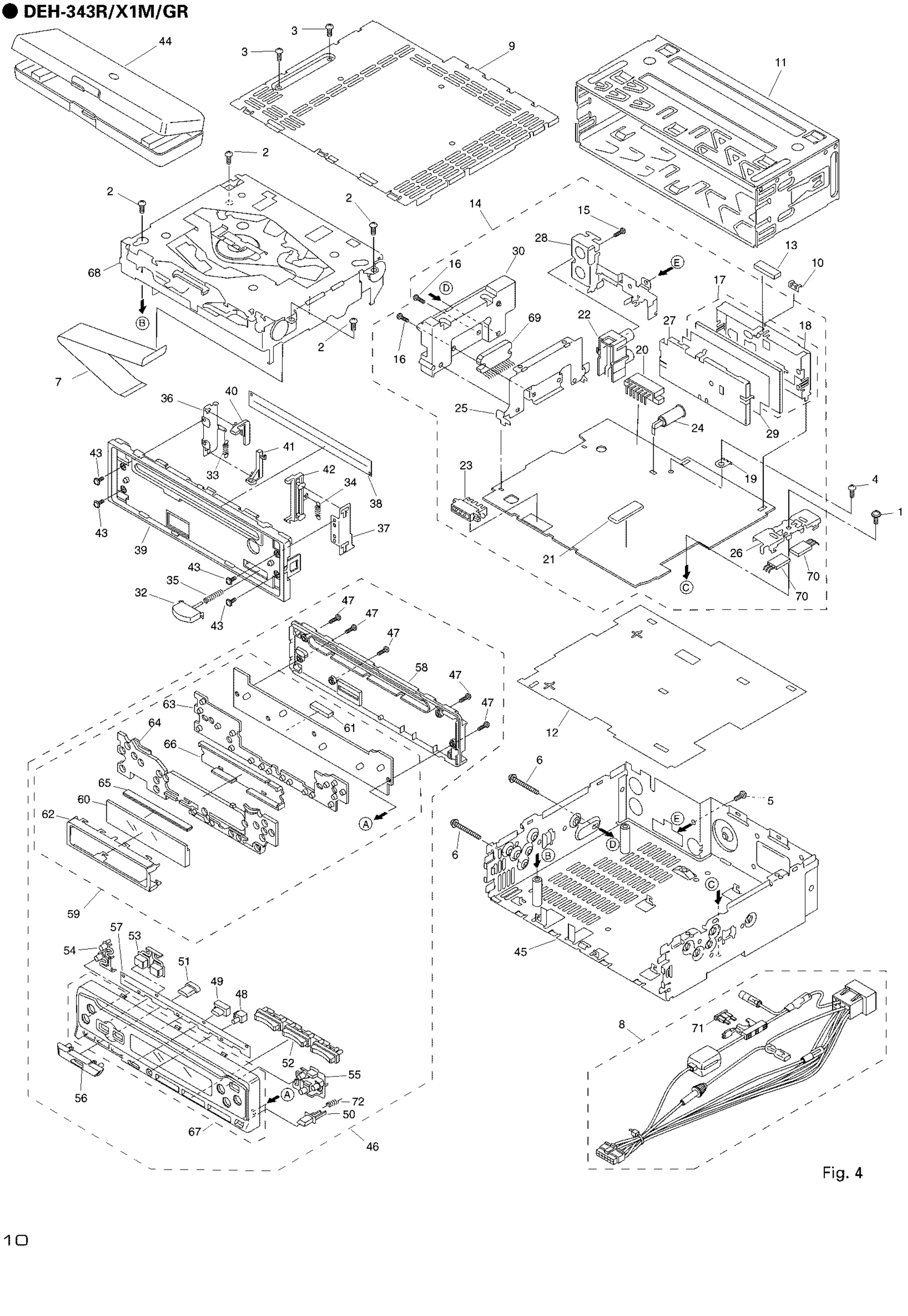


Fig. 4

ClibPDF - www.fastio.com

● EXTERIOR SECTION PARTS LIST

● DEH-343R/X1M/GR

Mark No.	Description	Part No.
1	Screw	ASZ26P080FMC
2	Screw	BSZ26P050FMC
3	Screw	BSZ30P050FMC
4	Screw	BSZ30P055FUC
5	Screw	BSZ30P060FMC
6	Screw	BSZ30P160FMC
7	Cable	CDE4869
8	Cord Assy	CDE5488
9	Case	CNB1989
10	Holder	CNC6469
11	Holder	CNC6798
12	Insulator	CNM5067
13	Cushion	CNM5210
14	Tuner Amp Unit	CWM5563
15	Screw	BPZ26P120FMC
16	Screw	BSZ26P120FMC
17	FM/AM Tuner Unit	CWE1470
18	Holder	CNC6554
19	Terminal(CN503)	CKF1059
20	Plug(CN951)	CKM1225
21	Connector(CN681)	CKS2228
22	Connector(CN421)	CKS3357
23	Connector(CN651)	CKS3581
24	Antenna Jack(CN501)	CKX1056
25	Holder	CNC6131
26	Holder	CNC6132
27	Holder	CNC6356
28	Holder	CNC7360
29	Insulator	CNM4684
30	Heat Sink	CNR1407
31	·····	
32	Button	CAC4836
33	Spring	CBH1834
34	Spring	CBH1835
35	Spring	CBH1996
36	Bracket	CNC6135
37	Bracket	CNC6791
38	Cover	CNM4875
39	Panel	CNS4265
40	Arm	CNV4692
41	Arm	CNV4693
42	Arm	CNV4728
43	Screw	IMS20P030FZK
44	Case Assy	CXB1063
45	Chassis Unit	CXB1777

Mark No.	Description	Part No.
46	Detach Grille Assy	CXB1794
47	Screw	BPZ20P100FZK
48	Button(BSM)	CAC4906
49	Button(BAND)	CAC4907
50	Button(DETACH)	CAC4913
51	Button(SOURCE)	CAC5346
52	Button(1-6)	CAC5348
53	Button(TRACK UP DOWN)	CAC5413
54	Button(LOC,CLOCK)	CAC5414
55	Button(EJECT)	CAC5415
56	Button(+ –)	CAC5350
57	Cover	CNM4704
58	Cover	CNS4264
59	Keyboard Unit	CWM5572
60	LCD(LCD1801)	CAW1453
61	Connector(CN1801)	CKS3580
62	Holder	CNC6872
63	Contact Rubber	CNV5116
64	Lighting Conductor	CNV5119
65	Connector	CNV5149
66	Housing	CNV5171
67	Grille Unit	CXB2094
68	CD Mechanism Module	CXK5003
69	IC(IC551)	TDA7384A
70	Transistor(Q981,991)	2SD2396
71	Fuse(10A)	CEK1136
72	Spring	CBH2103

ClibPDF - www.fastio.com

2.3 CD MECHANISM MODULE

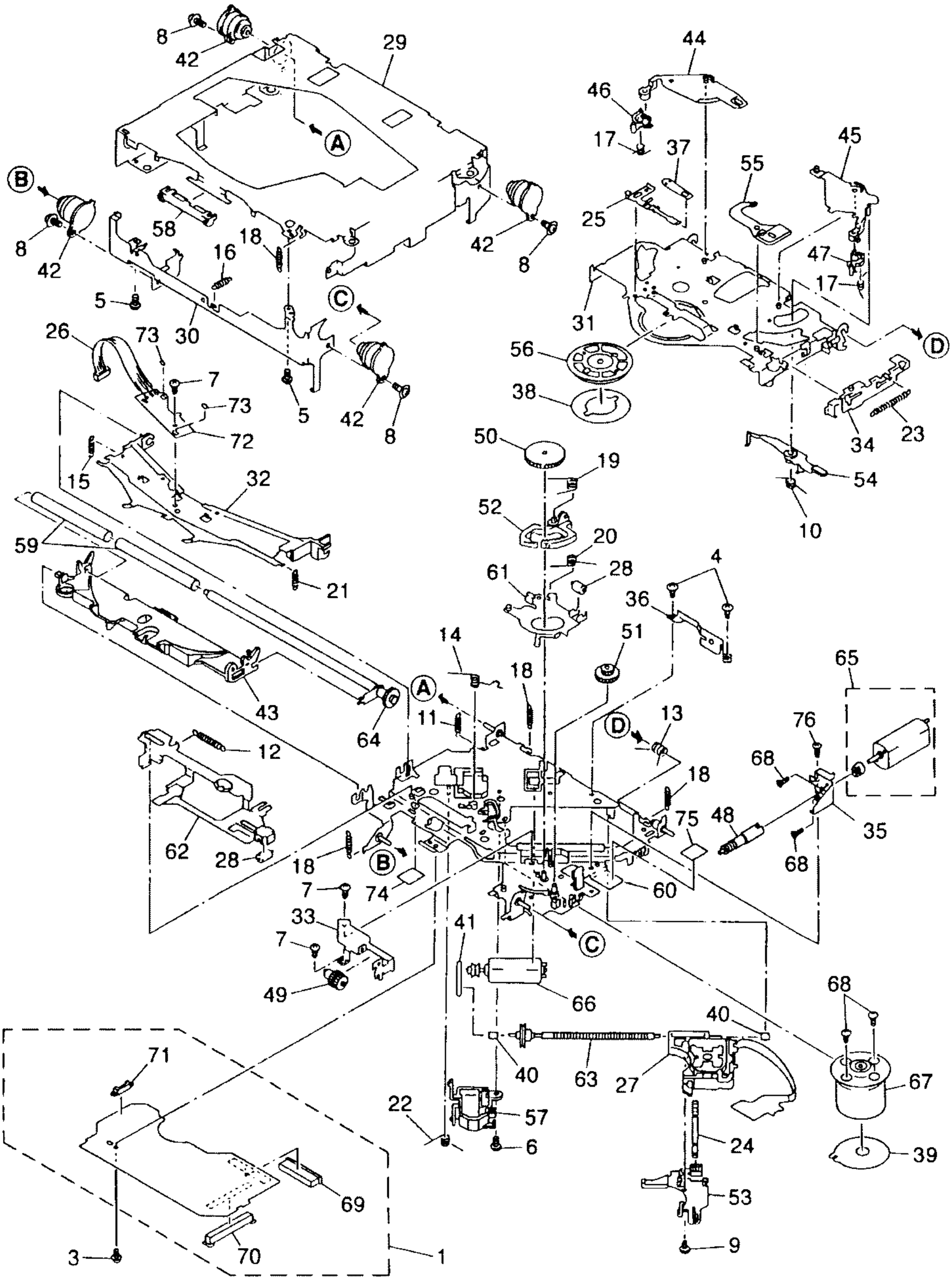


Fig. 5

ClibPDF - www.fastio.com

● CD MECHANISM MODULE SECTION PARTS LIST

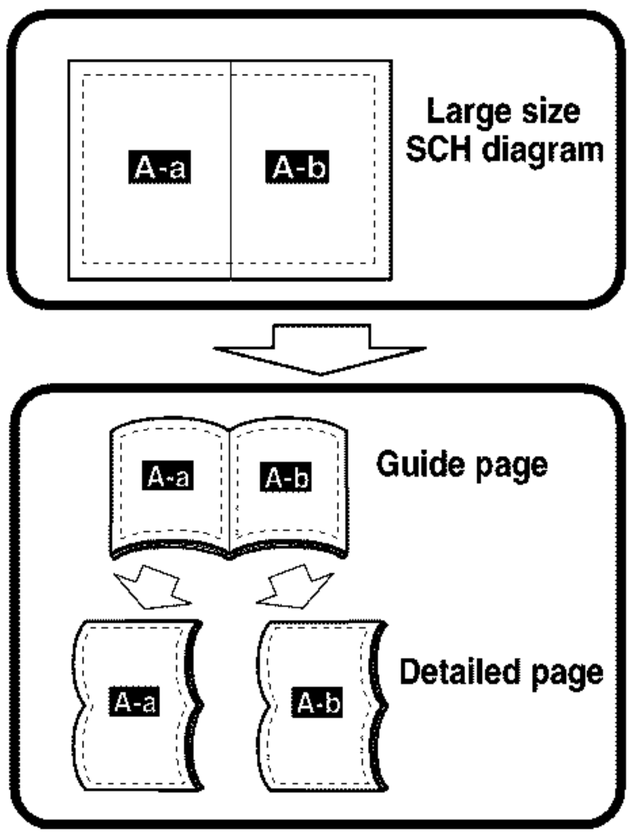
Mark	No.	Description	Part No.
	1	Control Unit	CWX2210
	2	·····	
	3	Screw	IMS26P035FMC
	4	Screw	BMZ20P040FMC
	5	Screw	BSZ20P040FMC
	6	Screw(M2×3)	CBA1077
	7	Screw(M2×2)	CBA1250
	8	Screw(M2×5)	CBA1296
	9	Screw(M2×3.85)	CBA1362
	10	Spring	CBH1945
	11	Spring	CBH1724
	12	Spring	CBH1939
	13	Spring	CBH1729
	14	Spring	CBH1730
	15	Spring	CBH1731
	16	Spring	CBH1732
	17	Spring	CBH1736
	18	Spring	CBH1745
	19	Spring	CBH1832
	20	Spring	CBH1833
	21	Spring	CBH1848
	22	Spring	CBH1849
	23	Spring	CBH1863
	24	Spring	CBL1214
	25	Spring	CBL1269
	26	Connector(CN1)	CDE4576
	27	Pickup Unit(Service)	CXX1230
	28	Roller	CLA2627
	29	Frame	CNC5796
	30	Frame	CNC5797
	31	Arm	CNC7206
*	32	Arm	CNC7383
	33	Bracket	CNC5871
	34	Lever	CNC6054
	35	Bracket	CNC6056
*	36	Bracket	CNC6376
	37	Spacer	CNM3315
	38	Sheet	CNM4849
	39	PCB	CNP4230
	40	Bearing	CNR1415
	41	Belt	CNT1071
	42	Damper	CNV3974
	43	Arm	CNV4120
	44	Arm	CNV4122
	45	Arm	CNV5033
	46	Arm	CNV4124
	47	Arm	CNV4125
	48	Gear	CNV4128
	49	Gear	CNV4129
	50	Gear	CNV4130
	51	Gear	CNV4131
	52	Arm	CNV4136
	53	Holder	CNV4663
	54	Arm	CNV4138
	55	Arm	CNV4139
	56	Clamper	CNV4712
	57	Holder	CNV5034
	58	Guide	CNV4484
	59	Roller	CNV4509
	60	Chassis Unit	CXA8561
	61	Arm Unit	CXA8565
	62	Lever Unit	CXA9300
	63	Screw Unit	CXA9388
	64	Gear Unit	CXA9389
	65	Load Motor Unit(M3)	CXA9391
	66	CRG Motor Unit(M2)	CXA9392
*	67	Motor Unit(M1)	CXA9407
	68	Screw	JFZ20P025FMC
	69	Connector(CN101)	CKS1953
	70	Connector(CN701)	CKS2774
	71	Connector(CN801)	CKS2196
*	72	Gathering PCB	CNX2445
	73	Photo-transistor(Q1, 2)	CPT-230S-X
	74	Sheet	CNM4873
	75	Cushion	CNM3917
	76	Screw	BMZ20P025FMC

ClibPDF - www.fastio.com

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

A TUNER AMP UNIT

ANT IN

B FM/AM TUNER UNIT

CWE1470:DEH-343R/X1M/GR
CWE1466:DEH-345R/X1M/EW, DEH-344R/X1M/EW

CN501

IC501 PLL PM2007A

OSC.F 7.200MHz

PLL

RDS DECODER

IC701 PM4006B

OSC.F 4.332MHz

TUN MUTE

FM/AM POWER SUPPLY SW

CD 8V

IC60 PD48 SYSTE CONTR

CN701

D CONTROL UNIT

CD

CN681

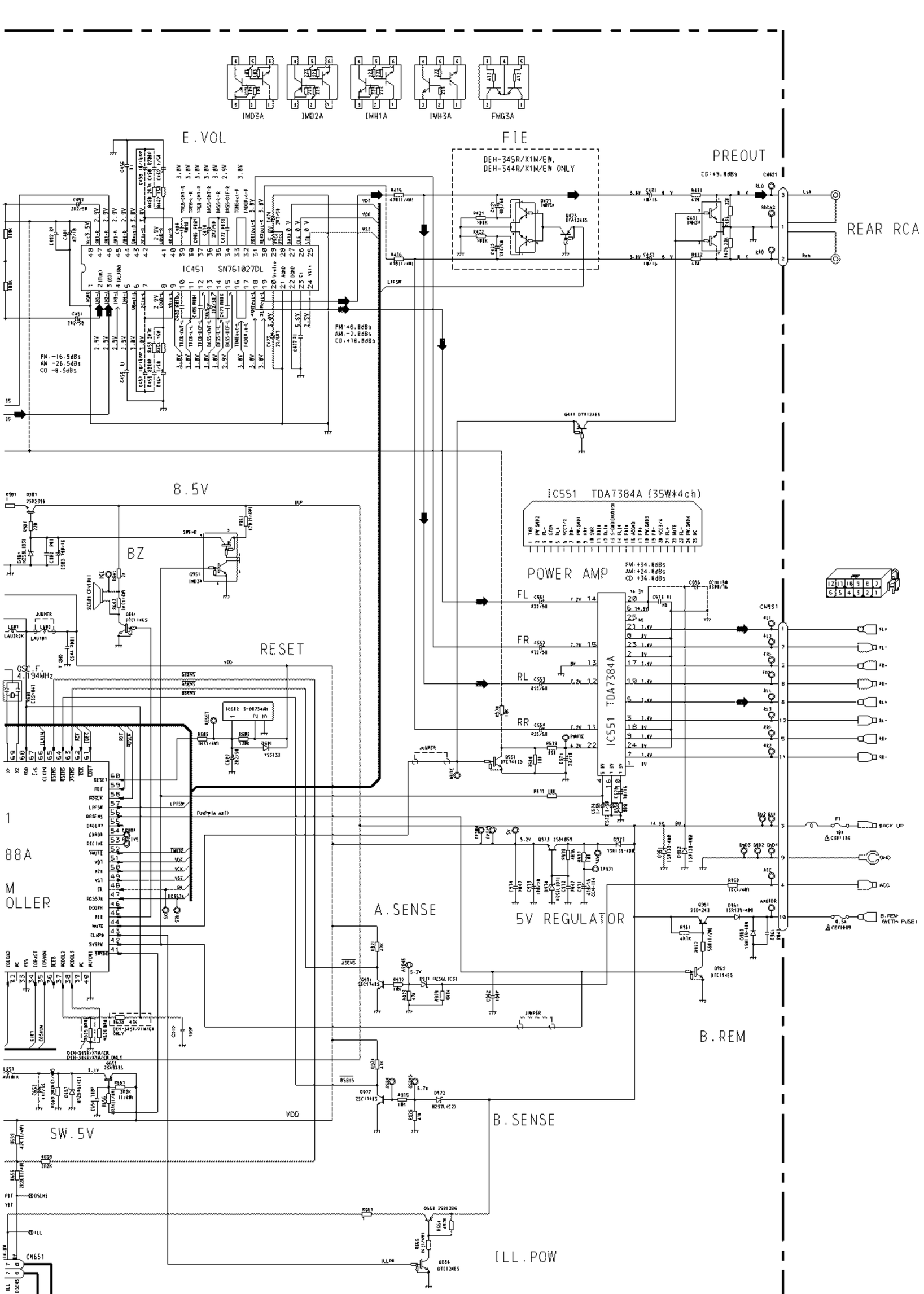
GRILLE

C KEYBOARD

A-a

ClibPDF - www.fastio.com

A-b



NOTE :

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Fig. 6

ClibPDF - www.fastio.com

ClibPDF - www.fastio.com

A-a | A-b

A-a

A TUNER AMP UNIT

ANT IN

B FM/AM TUNER UNIT

CWE1470:DEH-343R/X1M/GR
CWE1466:DEH-345R/X1M/EW,
DEH-344R/X1M/EW

CN501

R543

26 AMANT	25 FMANT	24 GND	23 LOCL	22 LOCH	21 FM+B	20 AMTV	19 FMTV	18 AMSL	17 VCO	16 VCO GND	15 AMIFC	14 AM+B		13 TUN+B	12 SEEK	11 GND	10 AMST	9 FMSL	8 R OUT	7 L OUT	6 FMSD	5 GD/FMIFC	4 MONO	3 ST	2 COMP	1 GND
	V		LOCL	LOCH	FMB	AMTV	FMTV		VCO			AMB		TUNB	SEEK						FMSD		MONO			

FM100%:-16.5dBs
AM30%:-26.5dBs

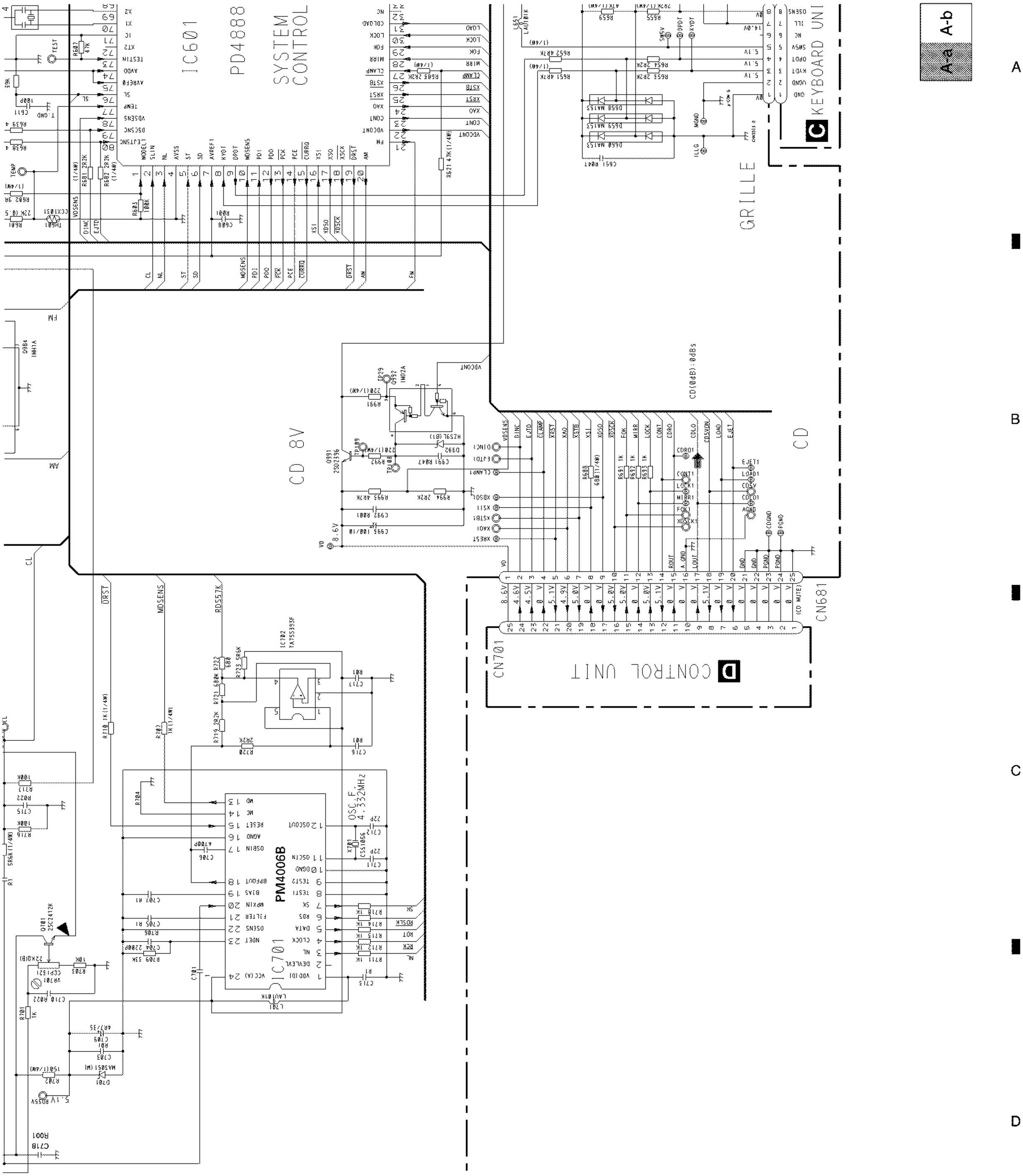


Fig. 7

ClibPDF - www.fastio.com

DEH-345R,344R,343R

A-a A-b

REAR RCA

PREOUT

CD:+9.0dBs

FIE

DEH-345R/X1M/EW,
DEH-344R/X1M/EW ONLY

FMG3A

IMH3A

IMH1A

IMD2A

IMD3A

E.VOL

IC551 TDA7384A(35W*4ch)

FM:+34.0dBs
AM:+24.0dBs
CD:+36.0dBs

POWER AMP

TDA7384A

FL

FR

RL

FM:+8.0dBs
AM:-2.0dBs
CD:+10.0dBs

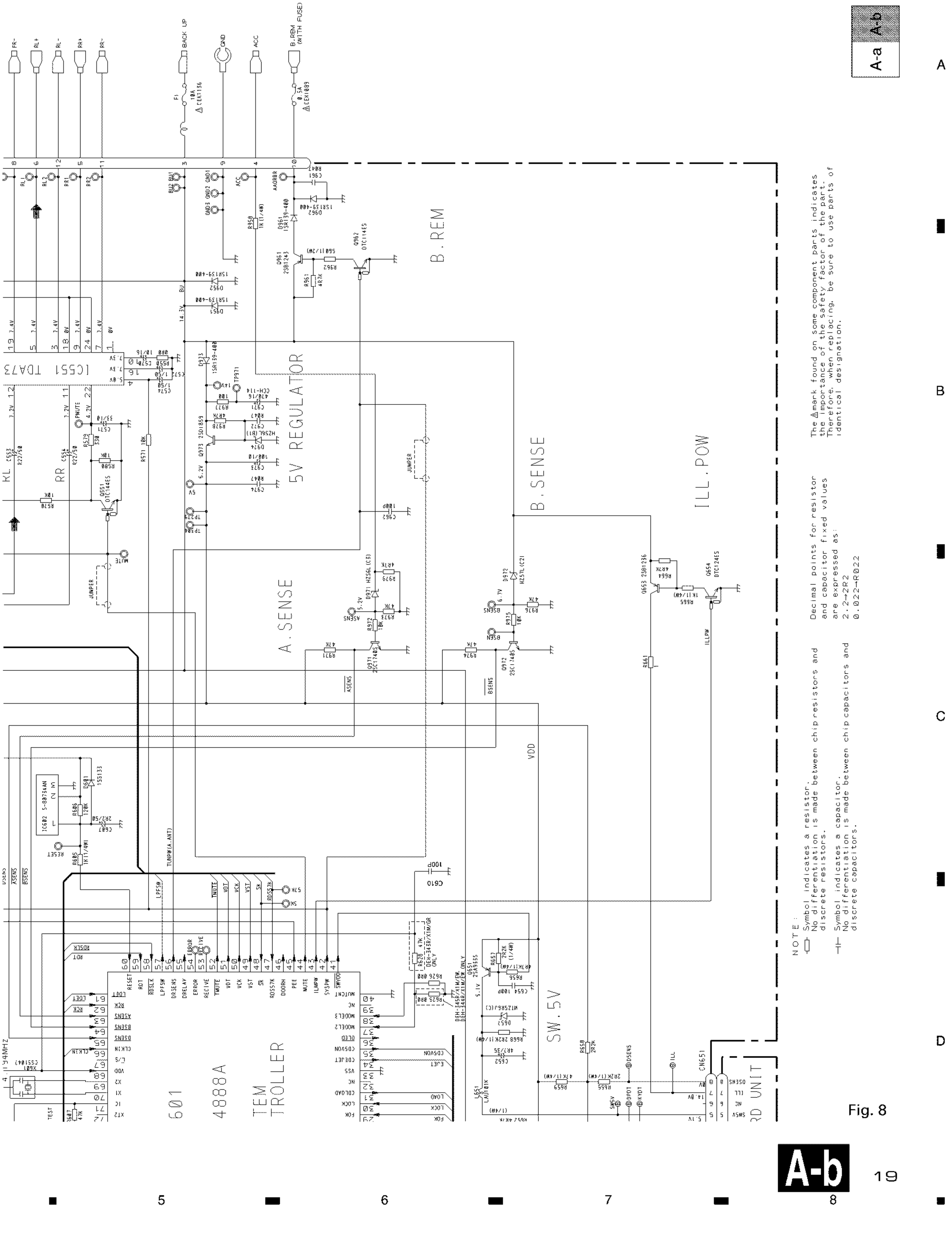
FM:-16.5dBs
AM:-26.5dBs
CD:-0.5dBs

8.5V

RESET

BZ

A-b



The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

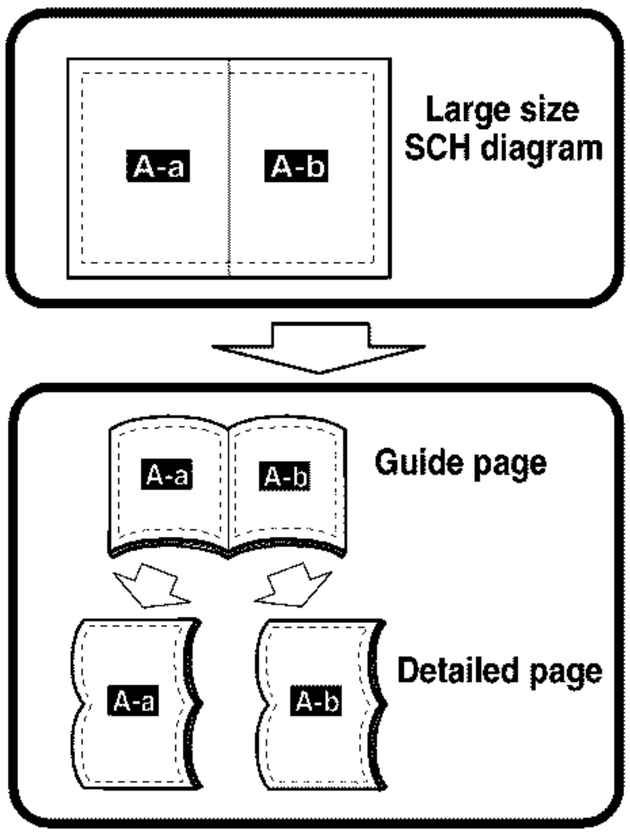
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

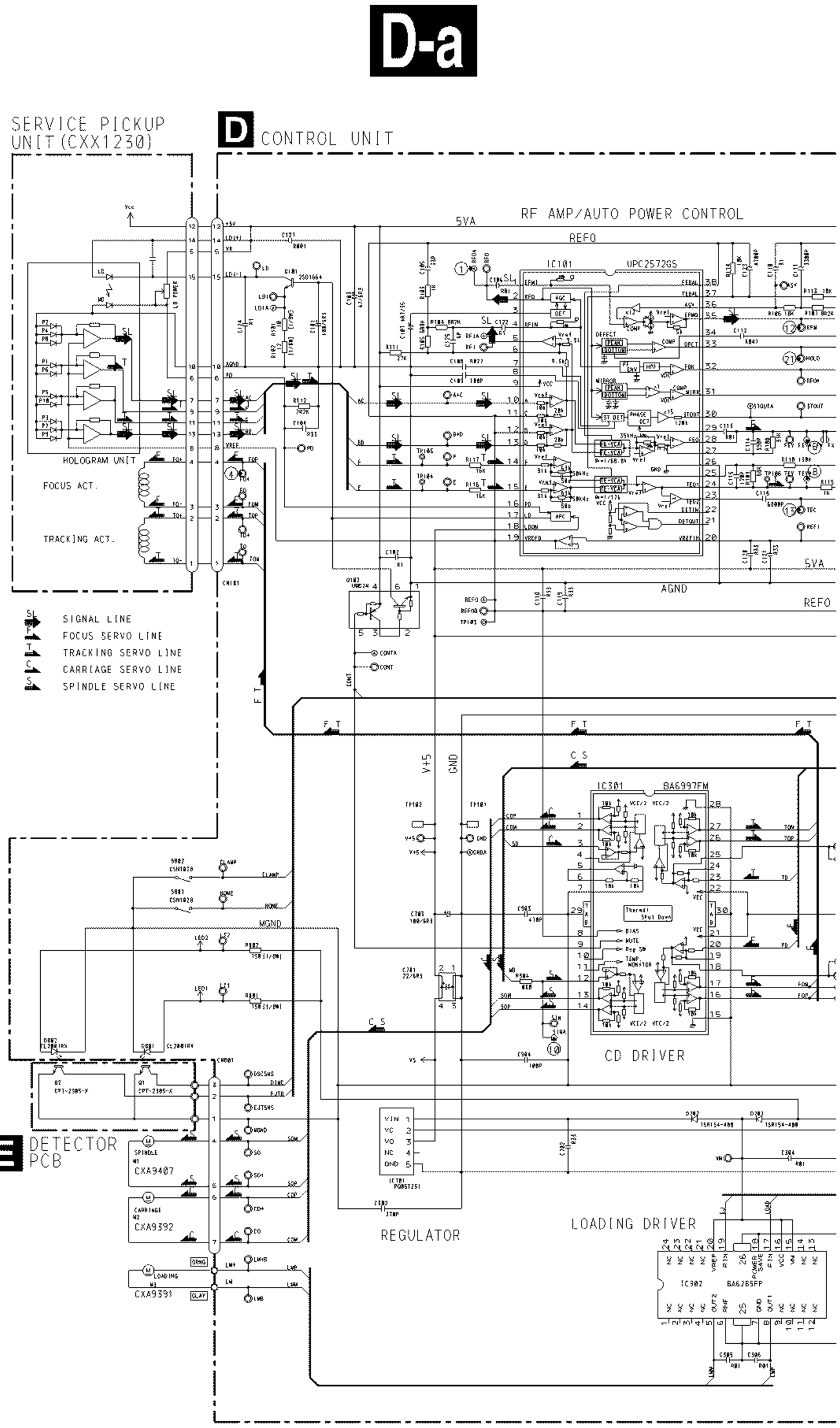
NOTE:
Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Fig. 8

ClibPDF - www.fastio.com

3.2 CD MECHANISM MODULE(GUIDE PAGE)





ClibPDF - www.fastio.com

D-b

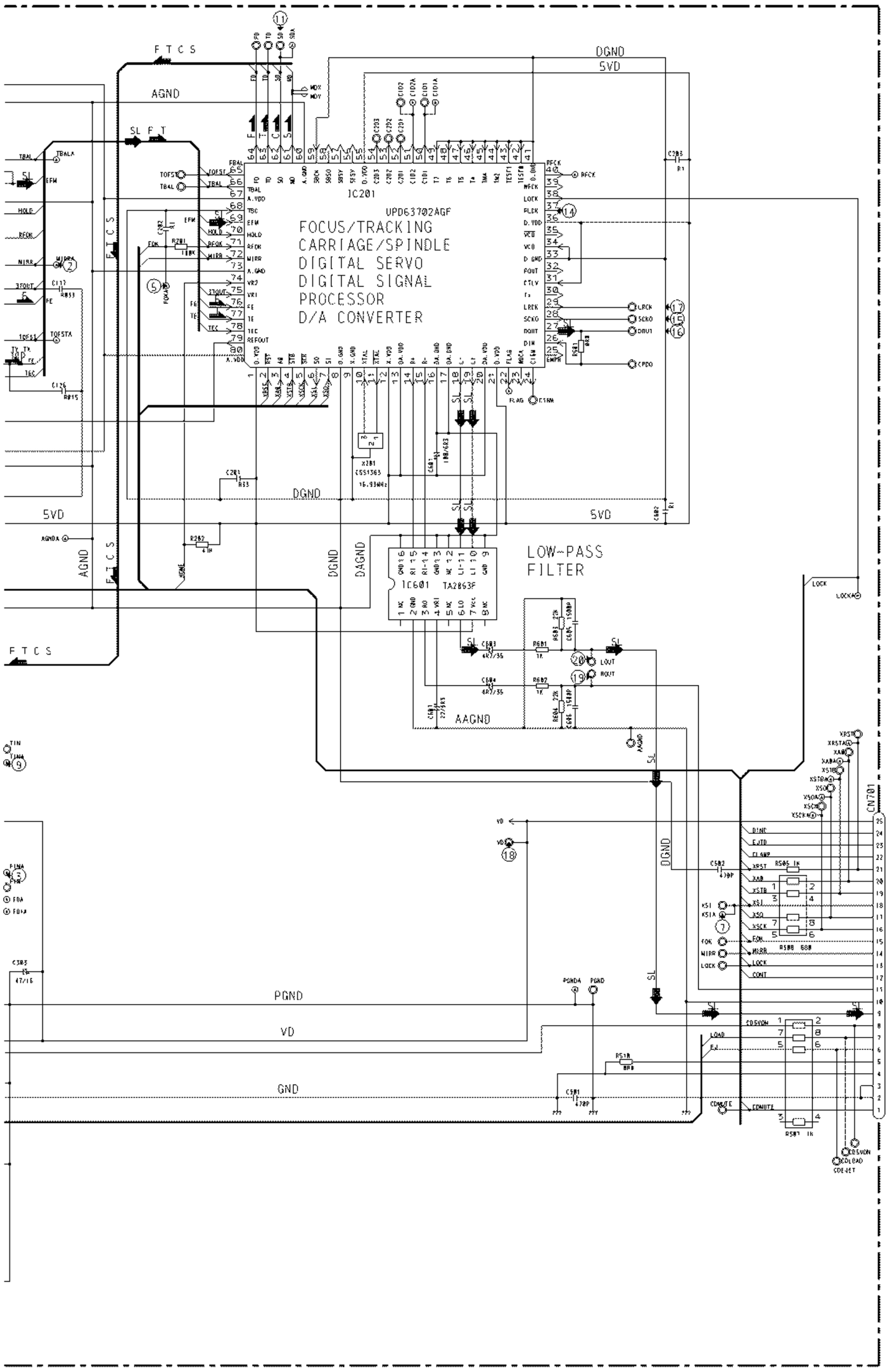
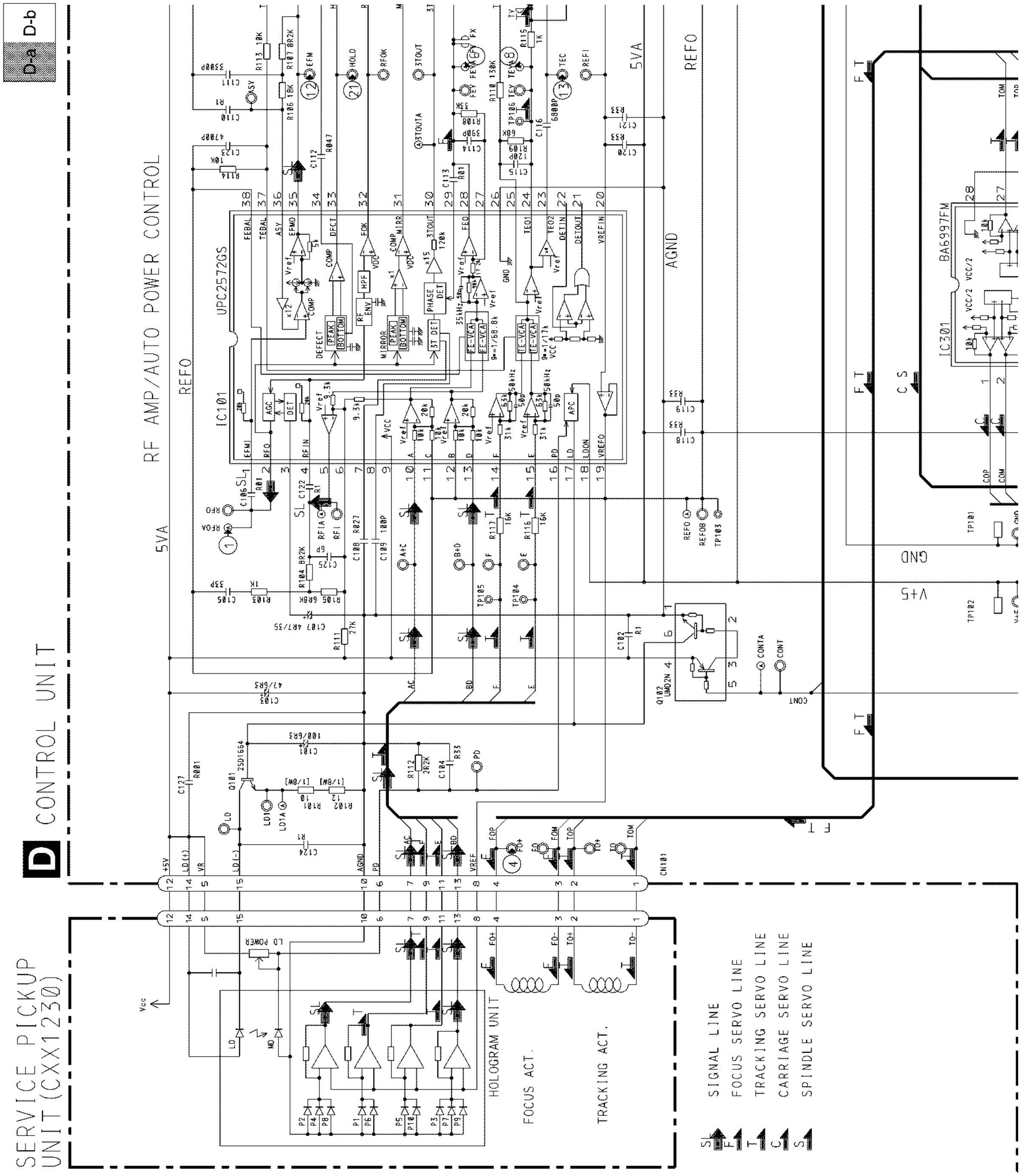

FTCS
AGND
SLFT
DGND
5VD
IC201
UPD63702AGF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL
PROCESSOR
D/A CONVERTER
LOW-PASS
FILTER
IC601 TA2863F
AAGND
PGND
VD
GND
CN701
CN681

Fig. 9



ClibPDF - www.fastio.com

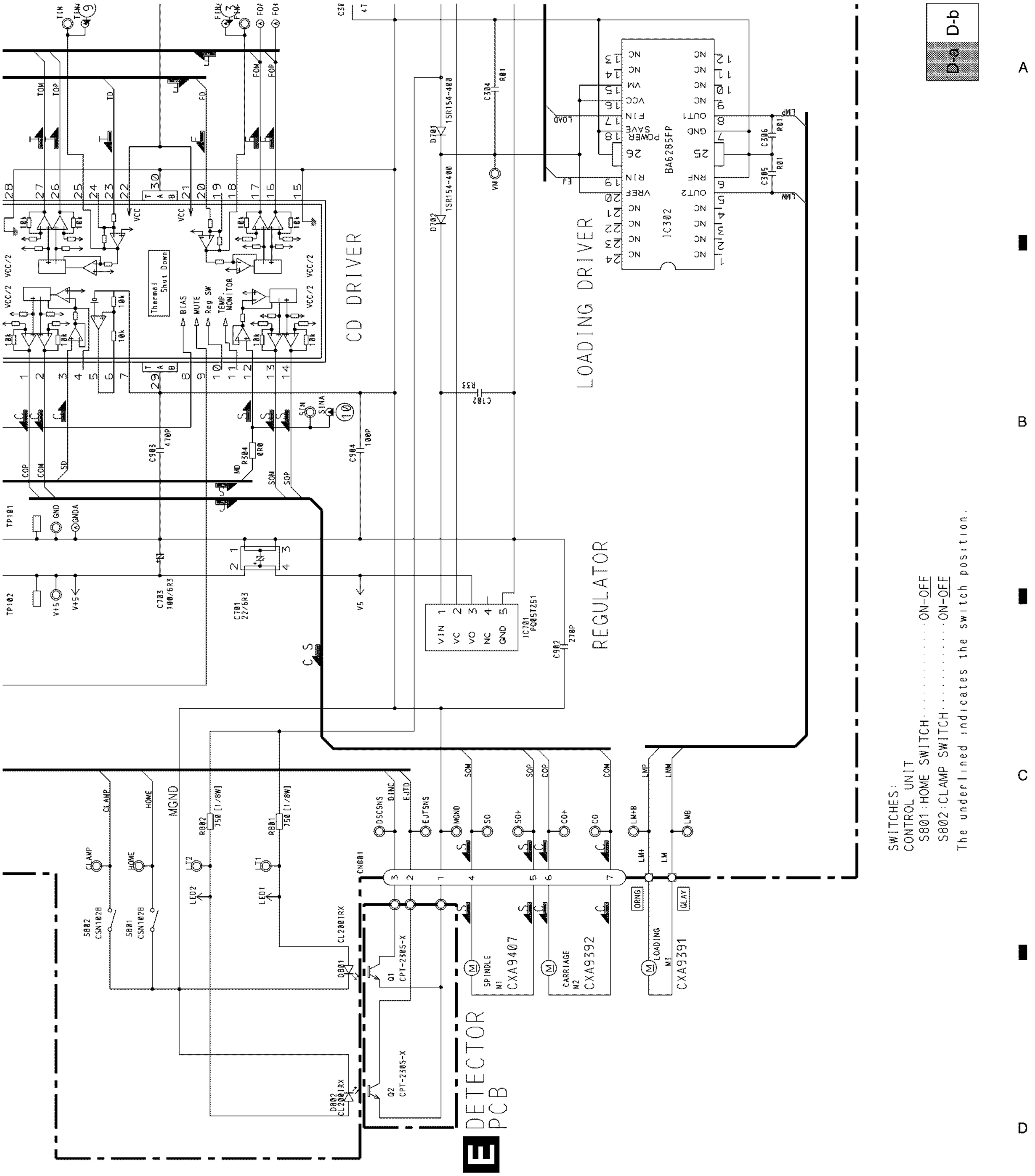
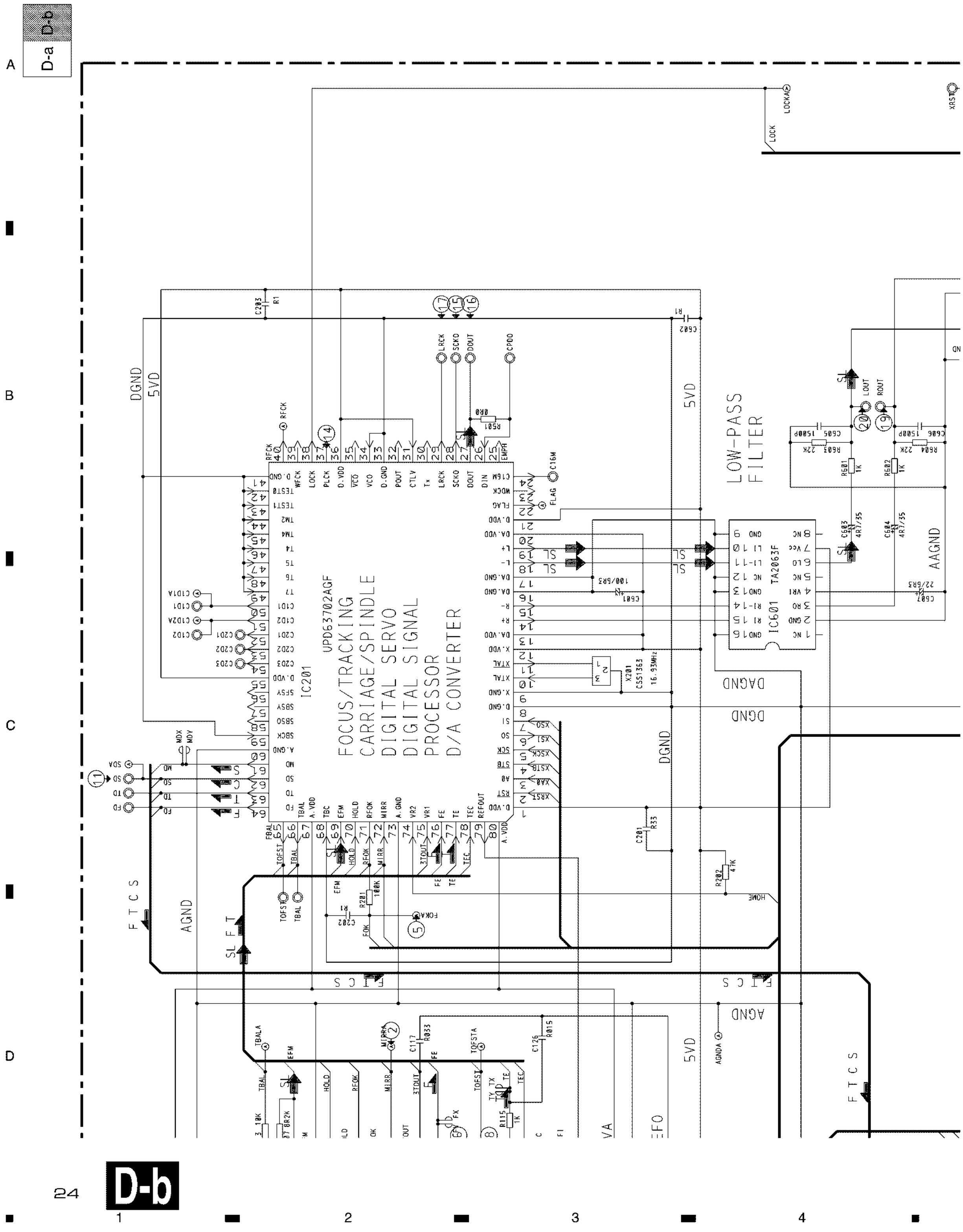

CD DRIVER
LOADING DRIVER
REGULATOR
DETECTOR PCB
IC302 BA6285FP
IC701 PQ05TZ51
CN801
CXA9407
CXA9392
CXA9391
SPINDLE M1
CARRIAGE M2
LOADING M3
SWITCHES:
CONTROL UNIT
S801:HOME SWITCH·····ON-OFF
S802:CLAMP SWITCH·····ON-OFF
The underlined indicates the switch position.

Fig. 10


D-a D-b
DGND
5VD
IC201
UPD63702AGF
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL
PROCESSOR
D/A CONVERTER
LOW-PASS
FILTER
IC601 TA2063F
AGND
DAGND
FTCS
SLFT
LOCKA
LOCK
XRST
LRCK
SCKO
DOUT
CPDO
RFCK
EMPH
C16M
FLAG
MDX
MDY
TOFSTA
TBALA
MIRRA
FOKA
HOME
X201
CSS1363
16.93MHz
LOUT
ROUT
5VD
AGNDA
D-b
24

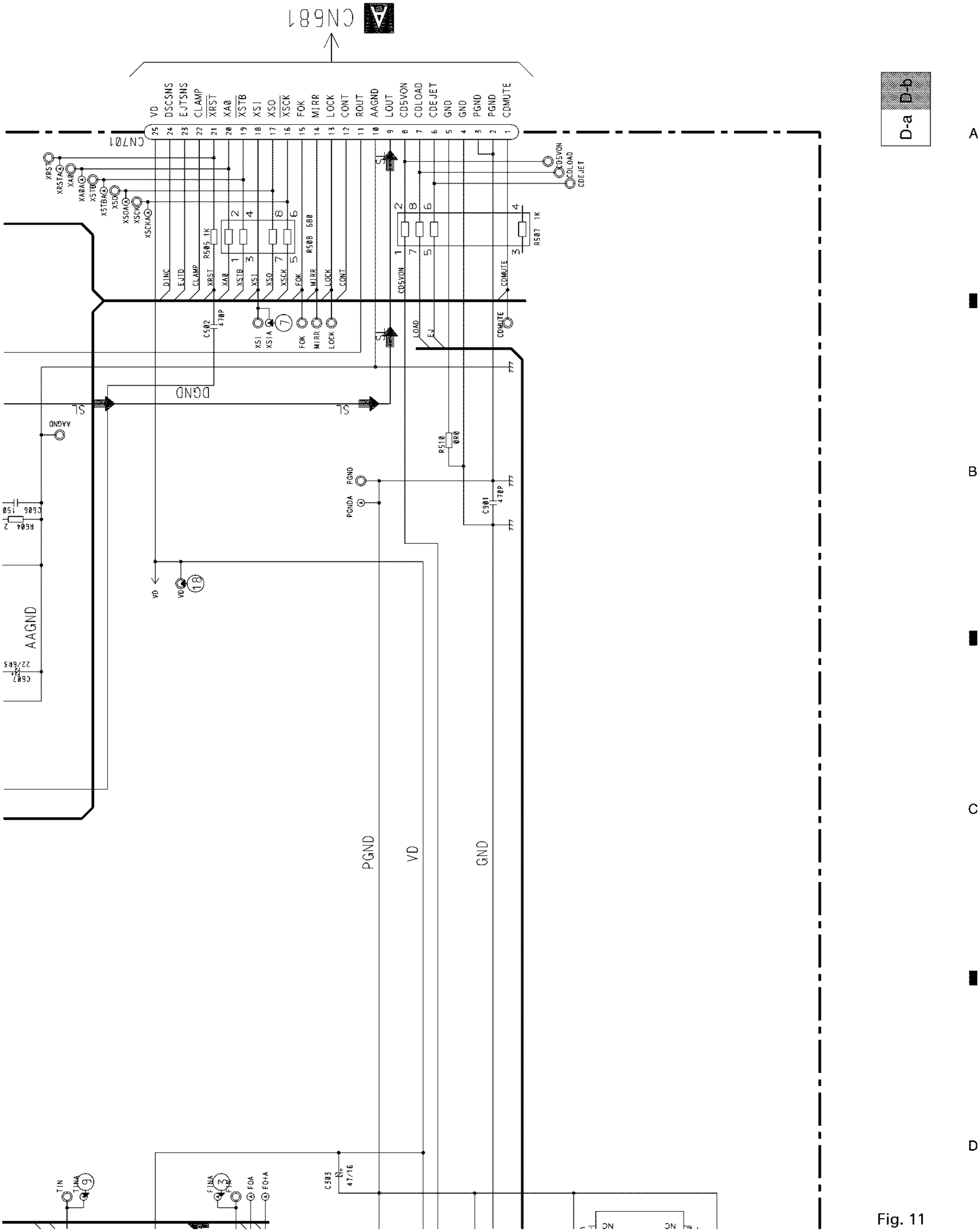
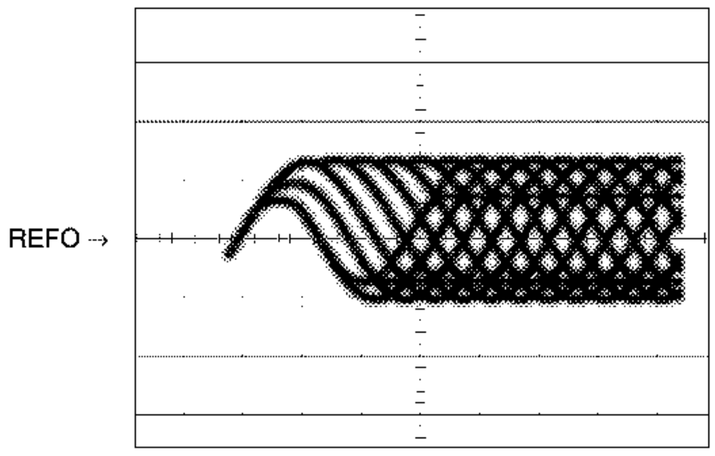

CN681
CN701
VD
DSCSNS
EJTSNS
CLAMP
XRST
XA0
XSTB
XSI
XSO
XSCK
FOK
MIRR
LOCK
CONT
ROUT
AAGND
LOUT
CD5VON
CDLOAD
CDEJET
GND
GND
PGND
PGND
CDMUTE
XRST
XA0A
XSTBA
XSOA
XSCKA
R505 1K
R508 500
R507 1K
C502 470P
R510 0R0
C901 470P
R604 2
C606 150
C607 22/6R3
AAGND
PGND
PGNDA
VD
SL
DGND
XSIA
FOK
MIRR
LOCK
LOAD
EJ
TIN
TINA
FINA
FIN
FOA
FO+A
C303 47/16
PGND
VD
GND

Fig. 11

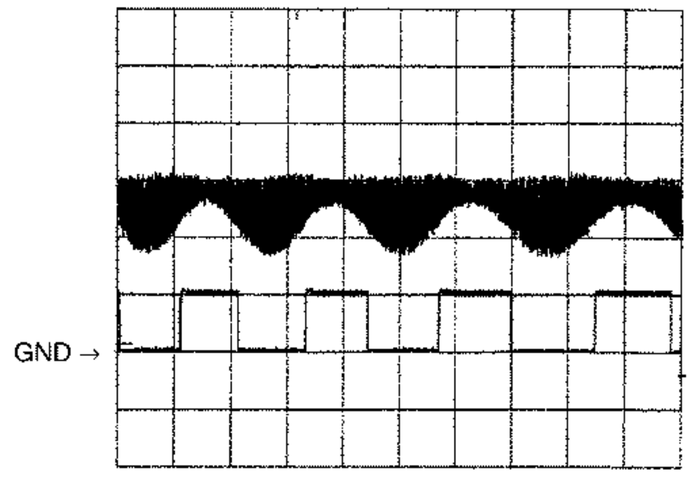
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

● Waveforms

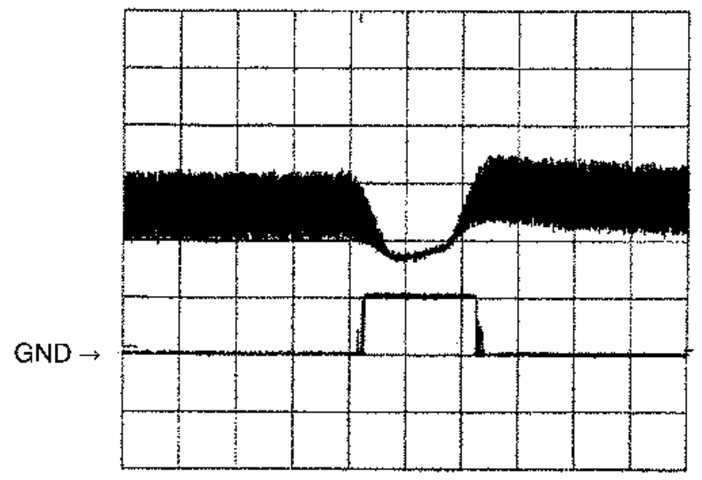
① RFO 0.5V/div. 0.5µs/div.
Normal mode: play



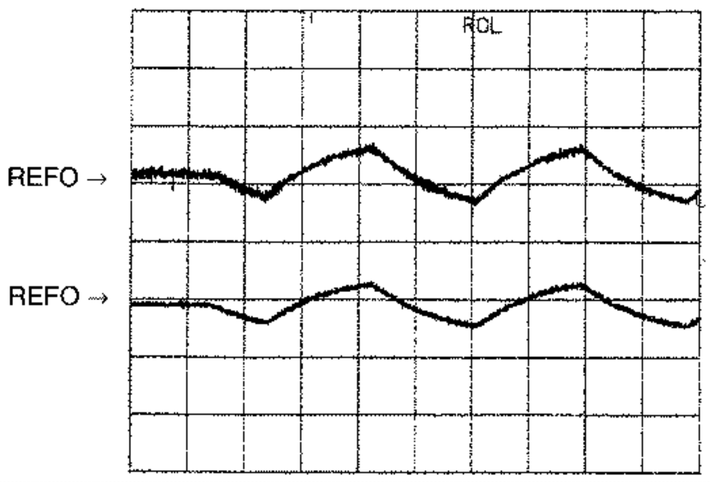
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Test mode: Tracking open



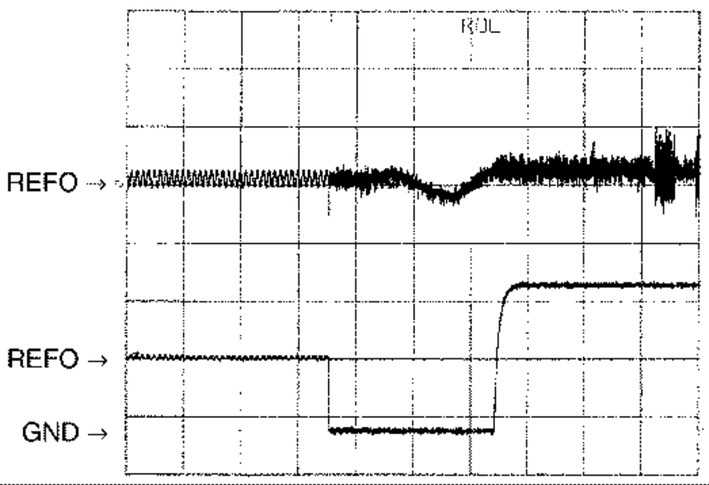
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Normal mode: The defect part passes 800µm



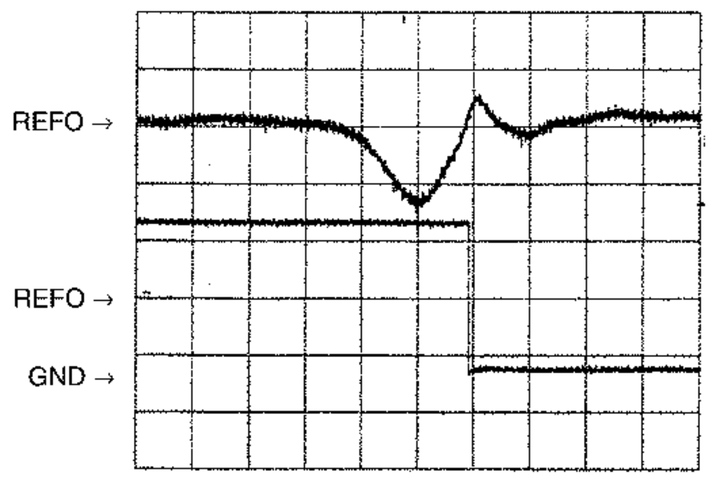
③ CH1: FIN 0.5V/div.
④ CH2: FO+ 2V/div. 0.2s/div.
Test mode: No disc, Focus close



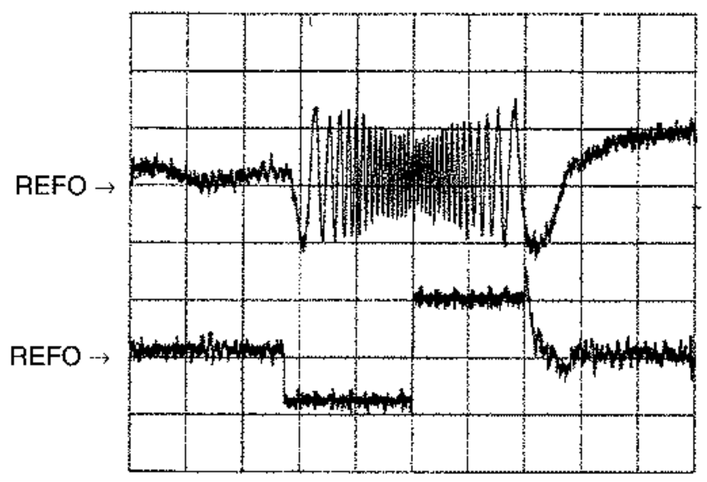
③ CH1: FIN 0.5V/div.
⑤ CH2: FOK 2V/div. 0.2s/div.
Normal mode: Focus close



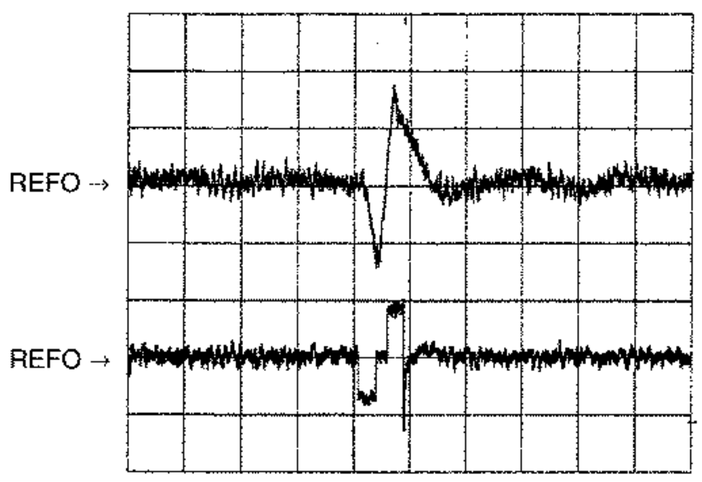
⑥ CH1: FEY 0.5V/div.
⑦ CH2: XSI 2V/div. 1ms/div.
Normal mode: Focus close



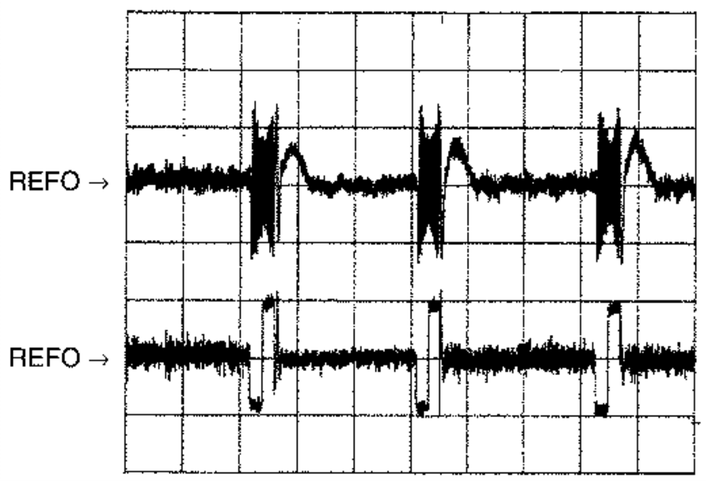
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: 32 tracks jump (FWD)



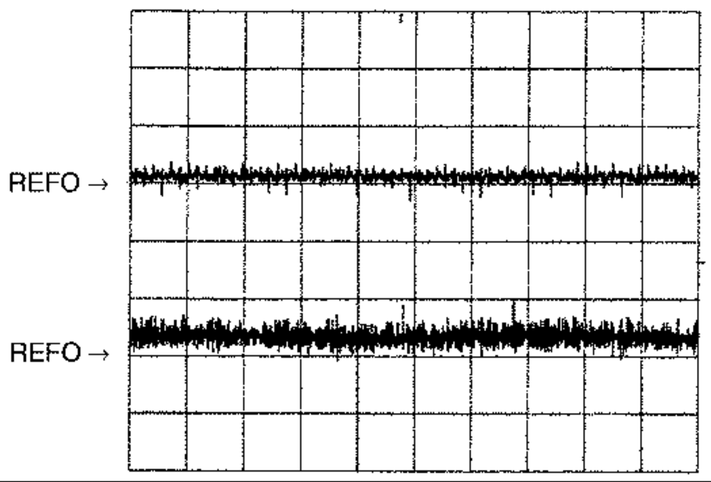
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: Single jump (FWD)



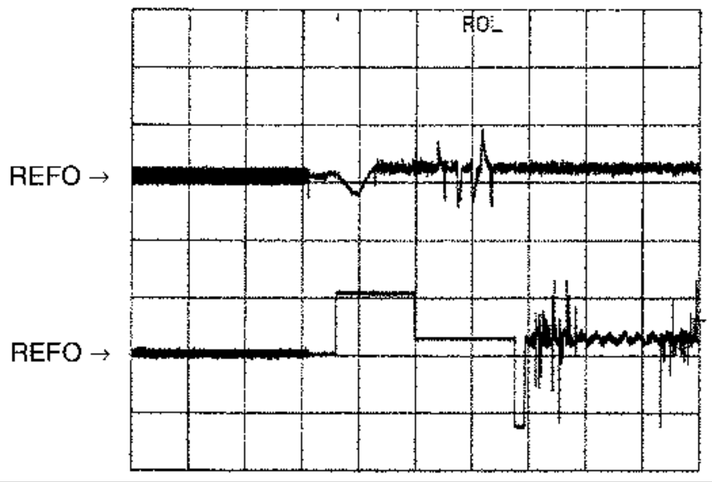
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 5ms/div.
Test mode: 100 tracks jump (FWD)



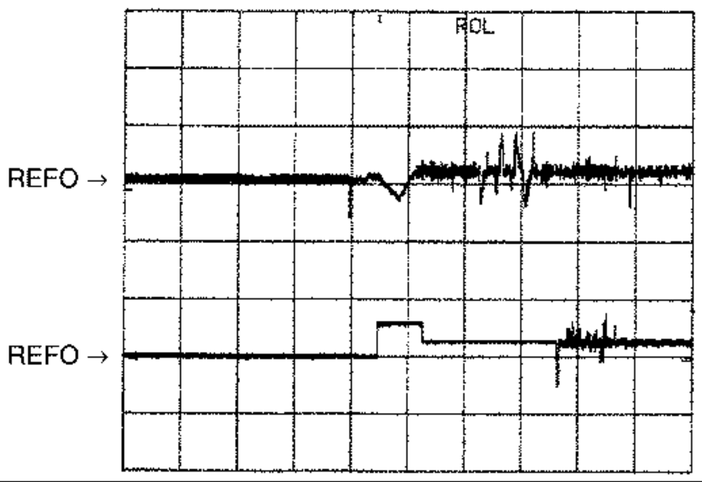
⑥ CH1: FEY 0.1V/div.
③ CH2: FIN 0.2V/div. 20ms/div.
Normal mode: Play



③ CH1: FIN 0.5V/div.
⑩ CH2: SIN 1V/div. 0.5s/div.
Normal mode: Focus close (12cm)

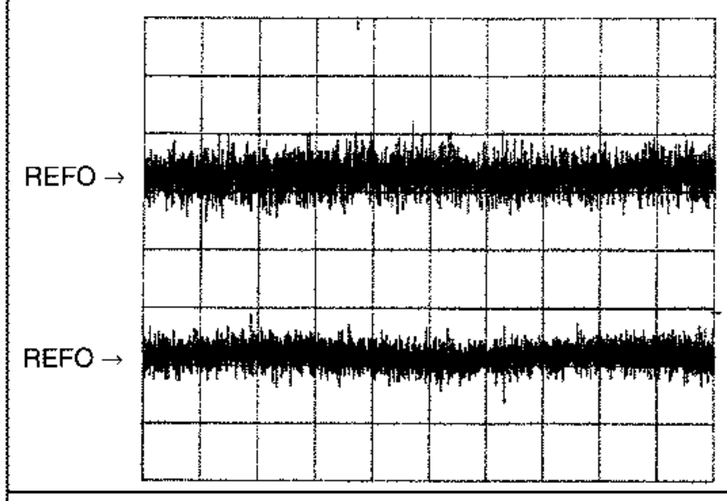


③ CH1: FIN 0.5V/div.
⑩ CH2: SIN 1V/div. 0.5s/div.
Normal mode: Focus close (8cm)

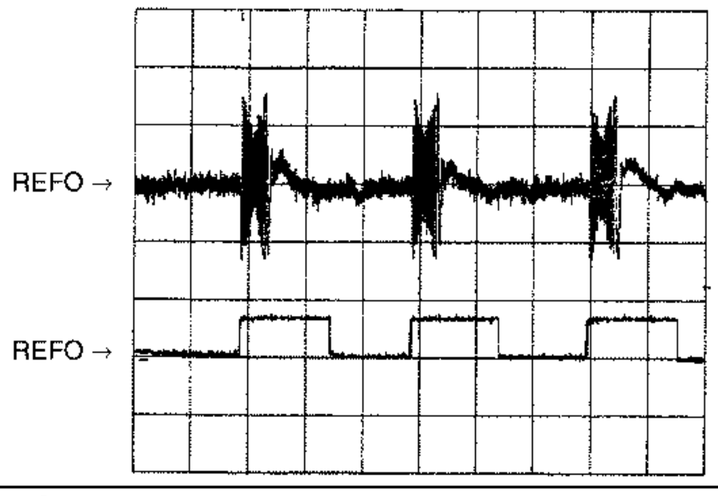


ClibPDF - www.fastio.com

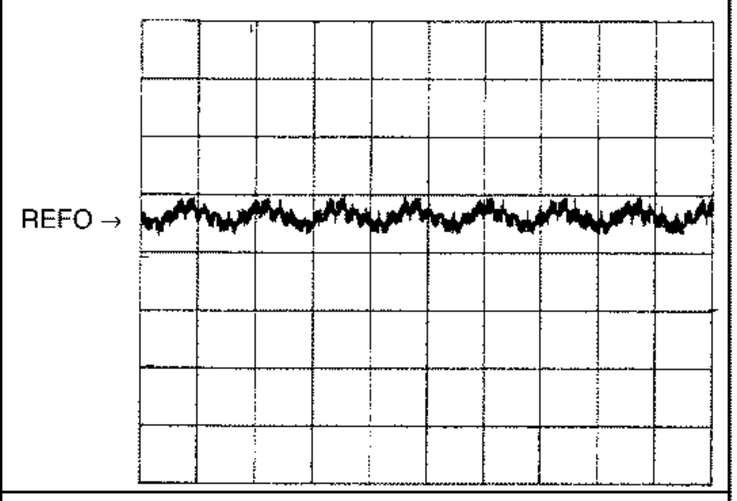
⑧ CH1: TEY 0.2V/div.
⑨ CH2: TIN 0.2V/div. 20ms/div.
Normal mode: play



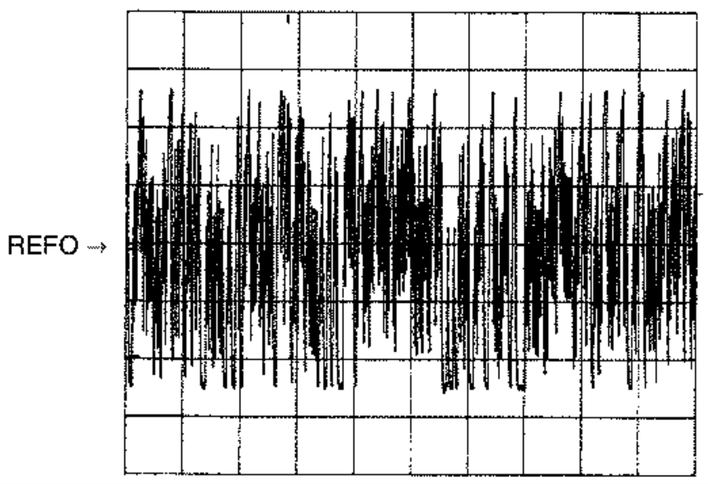
⑧ CH1: TEY 0.5V/div.
⑪ CH2: SD 0.5V/div. 5ms/div.



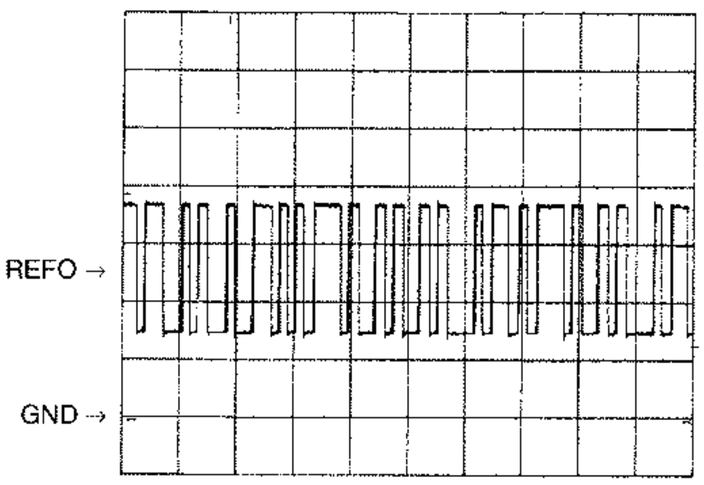
⑩ SIN 0.5V/div. 0.1s/div.
Normal mode: Play (12cm)



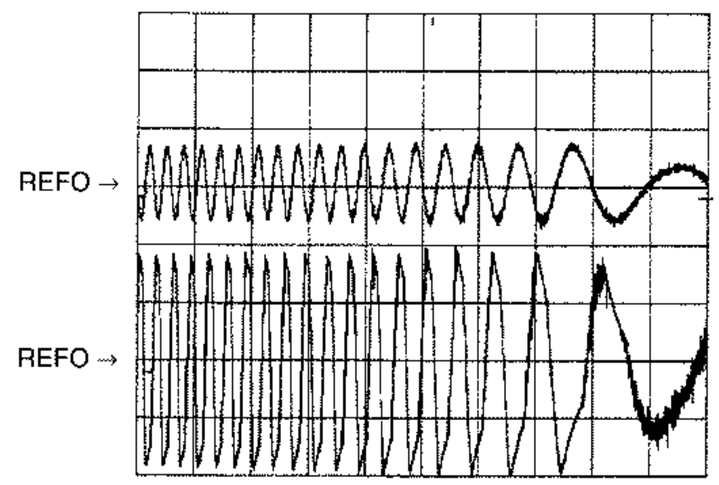
⑩ SIN 0.5V/div. 10ms/div.
Long Search (12cm)



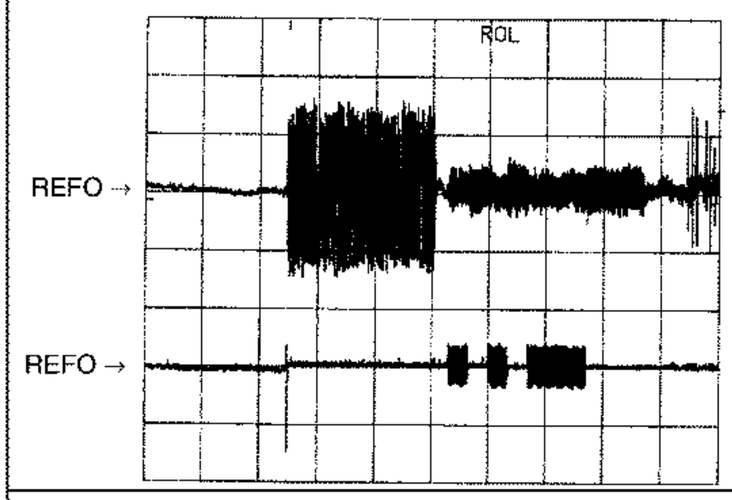
⑫ EFM 1V/div. 5µs/div.
Play



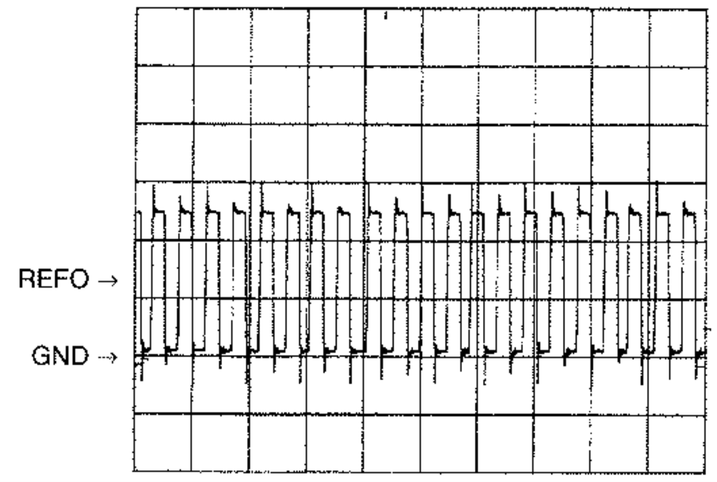
⑧ CH1: TEY 1V/div.
⑬ CH2: TEC 1V/div. 2ms/div.
Test mode: Focus close
Tracking open



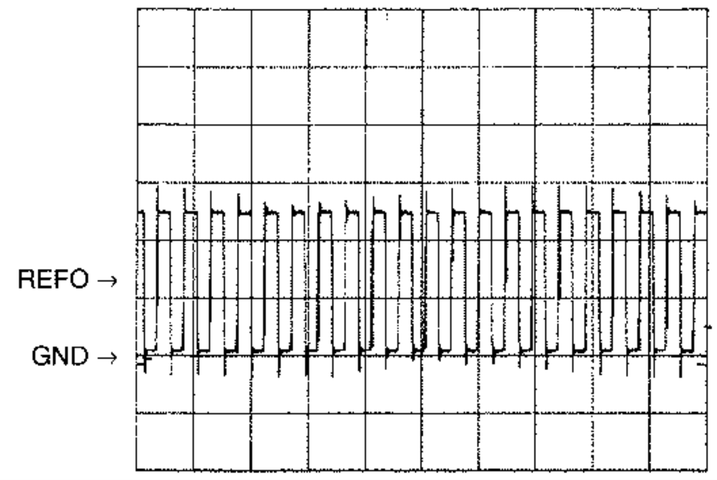
⑧ CH1: TEY 0.5V/div.
⑥ CH2: FEY 0.5V/div. 0.2s/div.
Normal mode: AGC after focus close



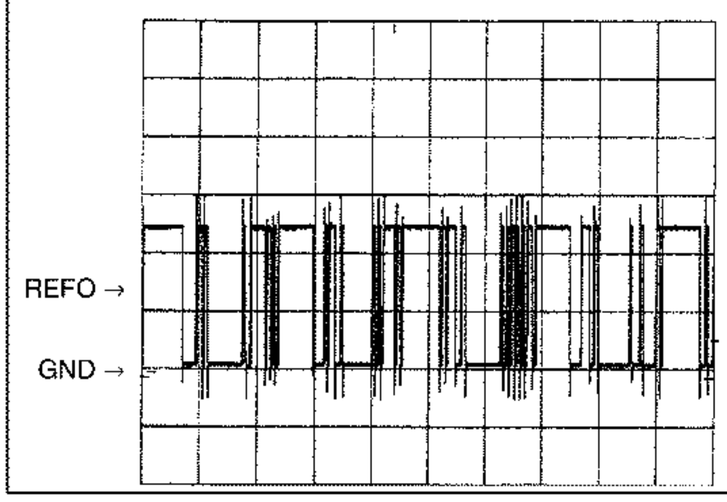
⑭ PLCK 2V/div. 0.5µs/div.
Play



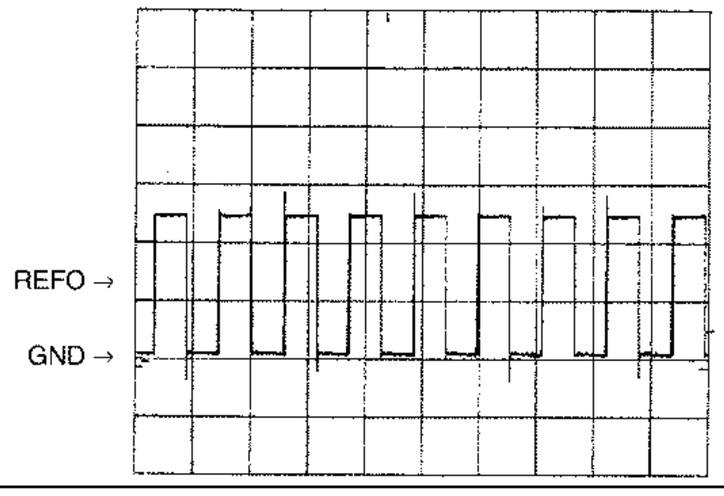
⑮ SCKO 2V/div. 1µs/div.
Play



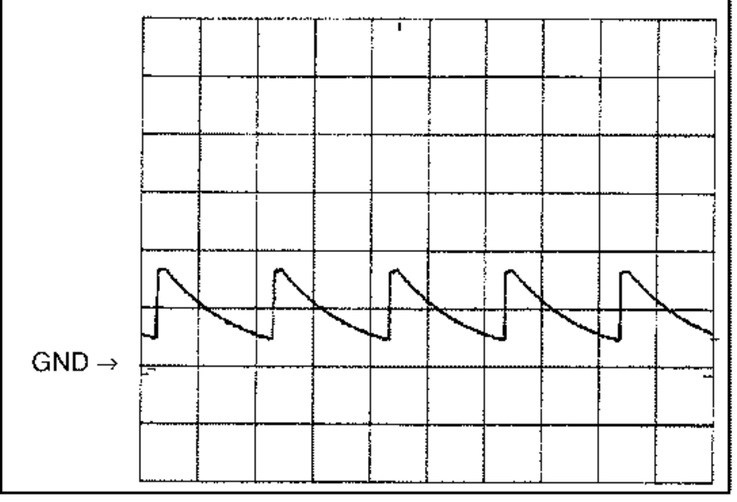
⑯ Dout 2V/div. 10µs/div.
Play



⑰ LRCK 2V/div. 20µs/div.

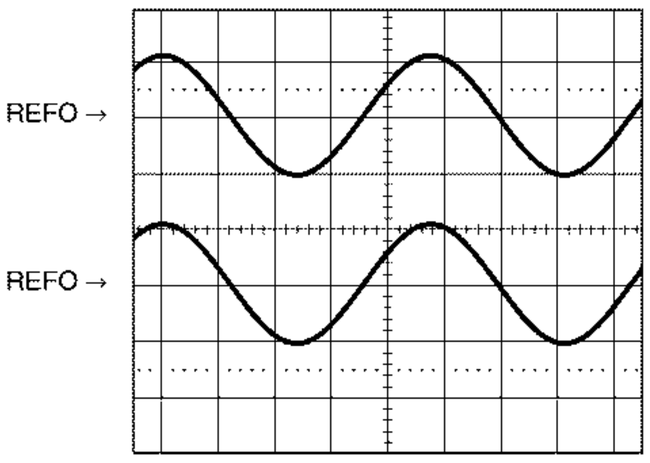


⑱ VD 5V/div. 50ms/div.
Normal mode: No disc

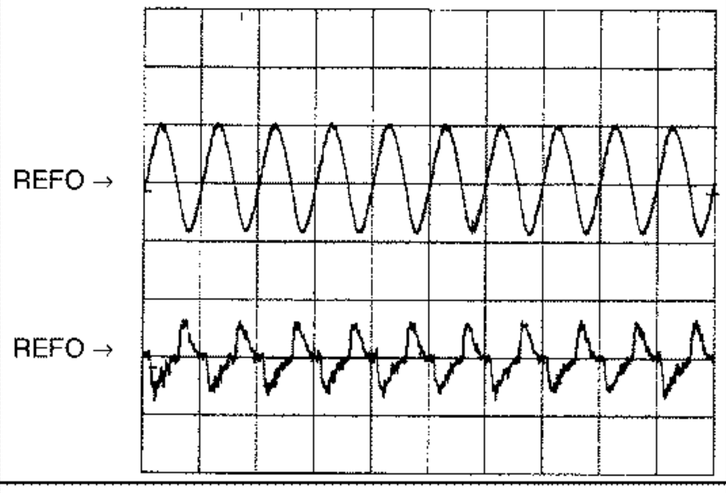


ClibPDF - www.fastio.com

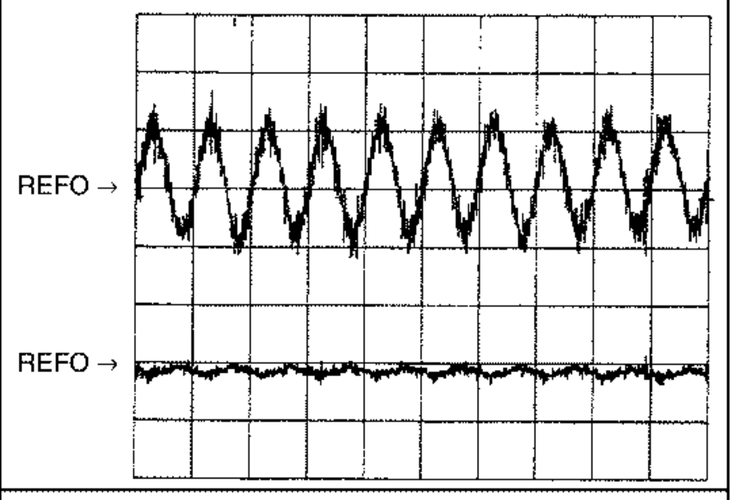
⑲ CH1: R OUT 1V/div.
⑳ CH2: L OUT 1V/div.
0.2ms/div.
Normal mode: Play (1kHz 0dB)



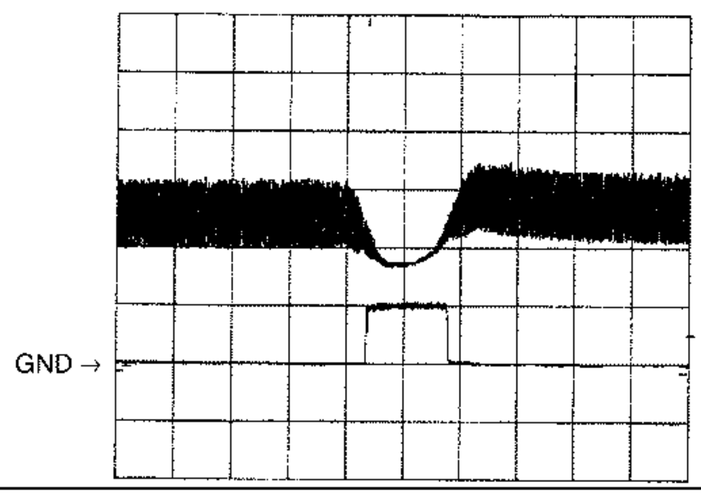
⑥ CH1: FEY 0.2V/div.
③ CH2: FIN 0.5V/div.
1ms/div.
Normal mode: During AGC



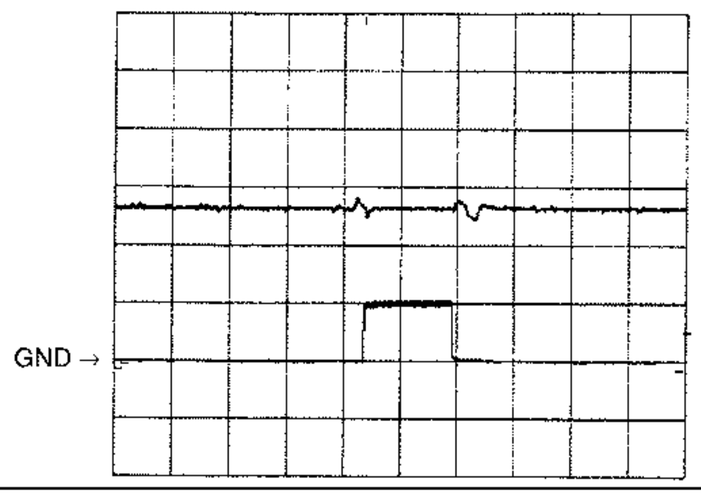
⑧ CH1: TEY 0.2V/div.
⑨ CH2: TIN 0.5V/div.
1ms/div.
Normal mode: During AGC



① CH1: RFO 1V/div.
㉑ CH2: HOLD 5V/div.
0.5ms/div.
Normal mode: The defect part passes 800µm



③ CH1: FIN 1V/div.
㉑ CH2: HOLD 5V/div.
0.5ms/div.
Normal mode: The defect part passes 800µm

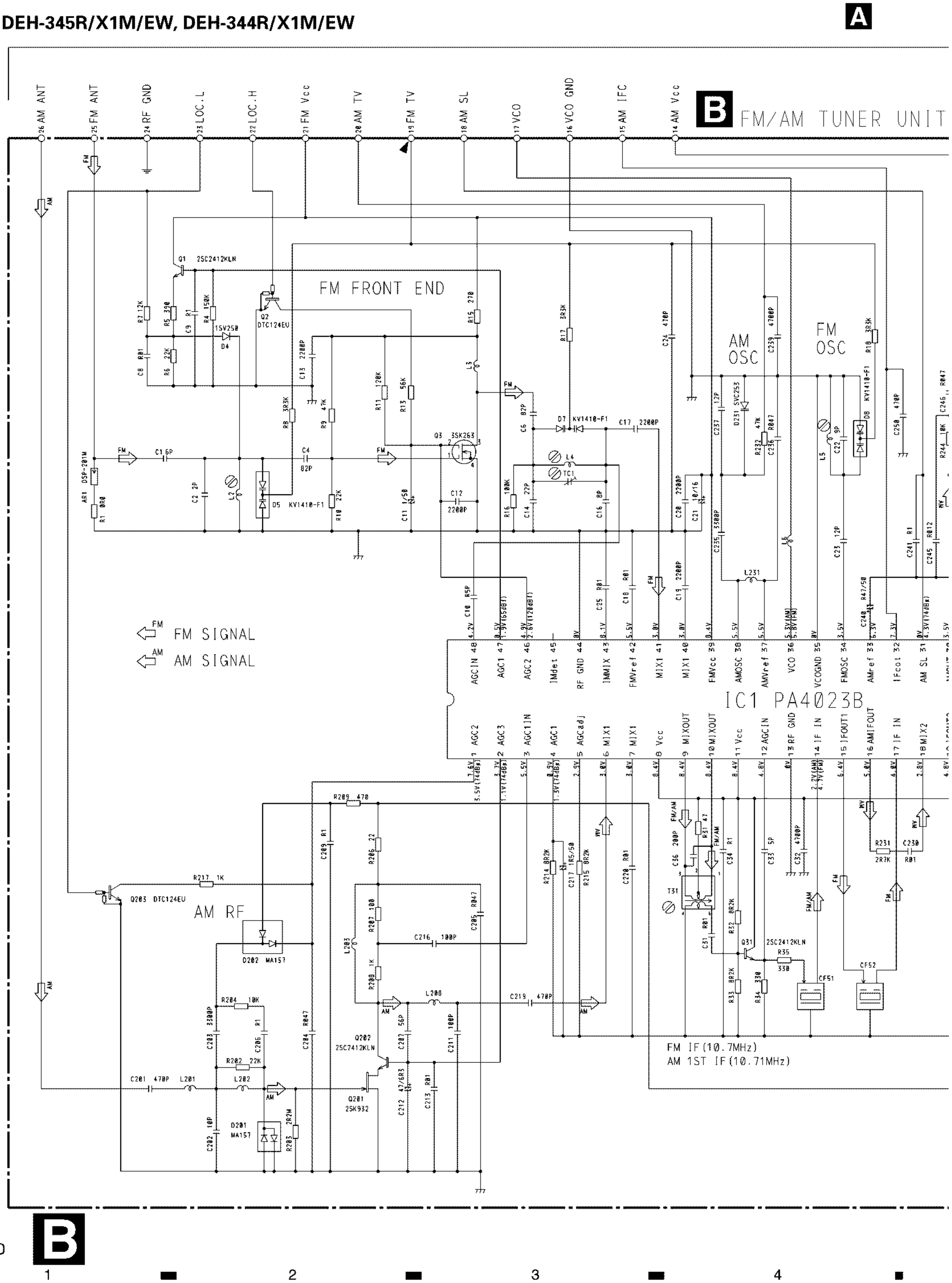


ClibPDF - www.fastio.com

ClibPDF - www.fastio.com

3.3 FM/AM TUNER UNIT

● DEH-345R/X1M/EW, DEH-344R/X1M/EW



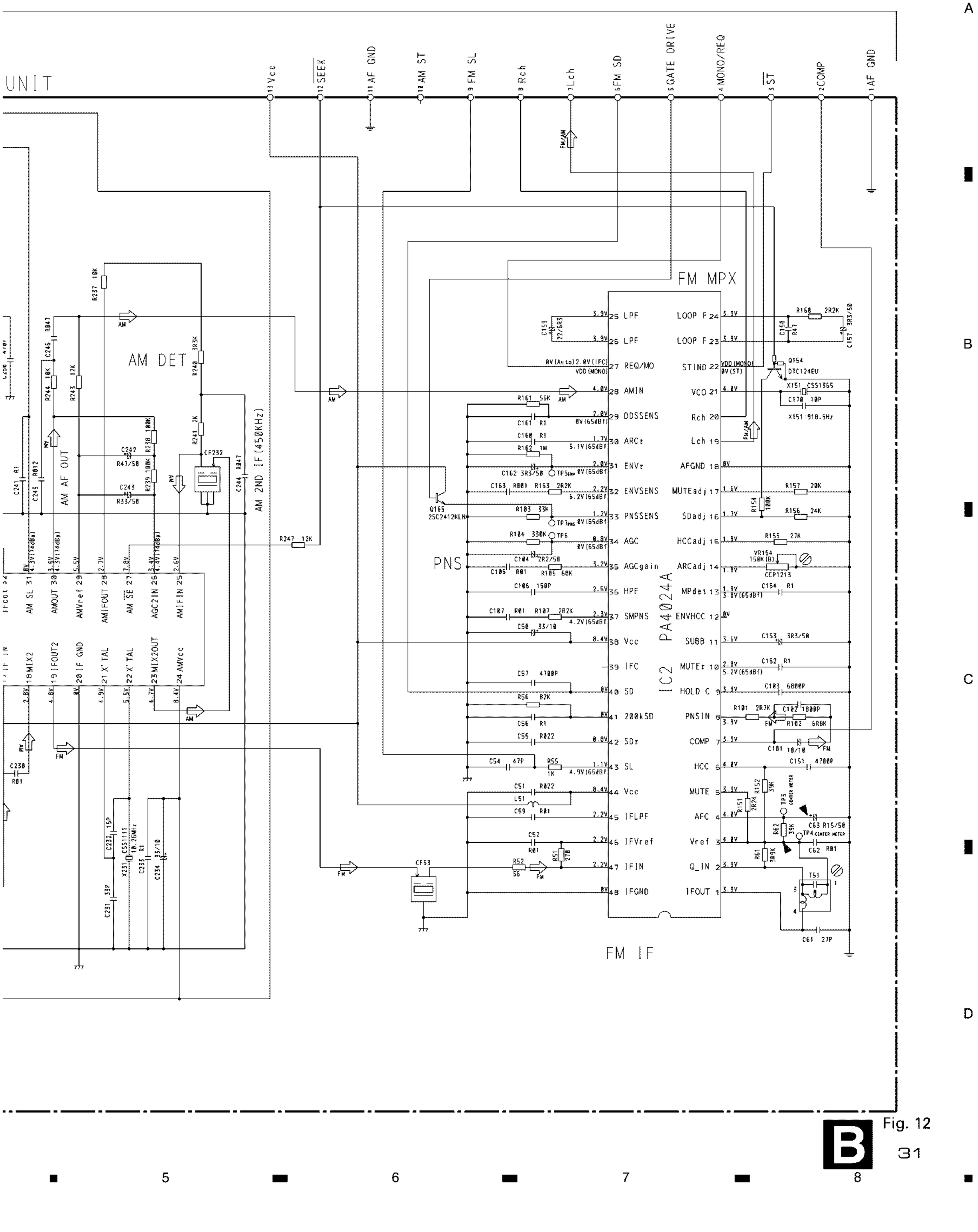
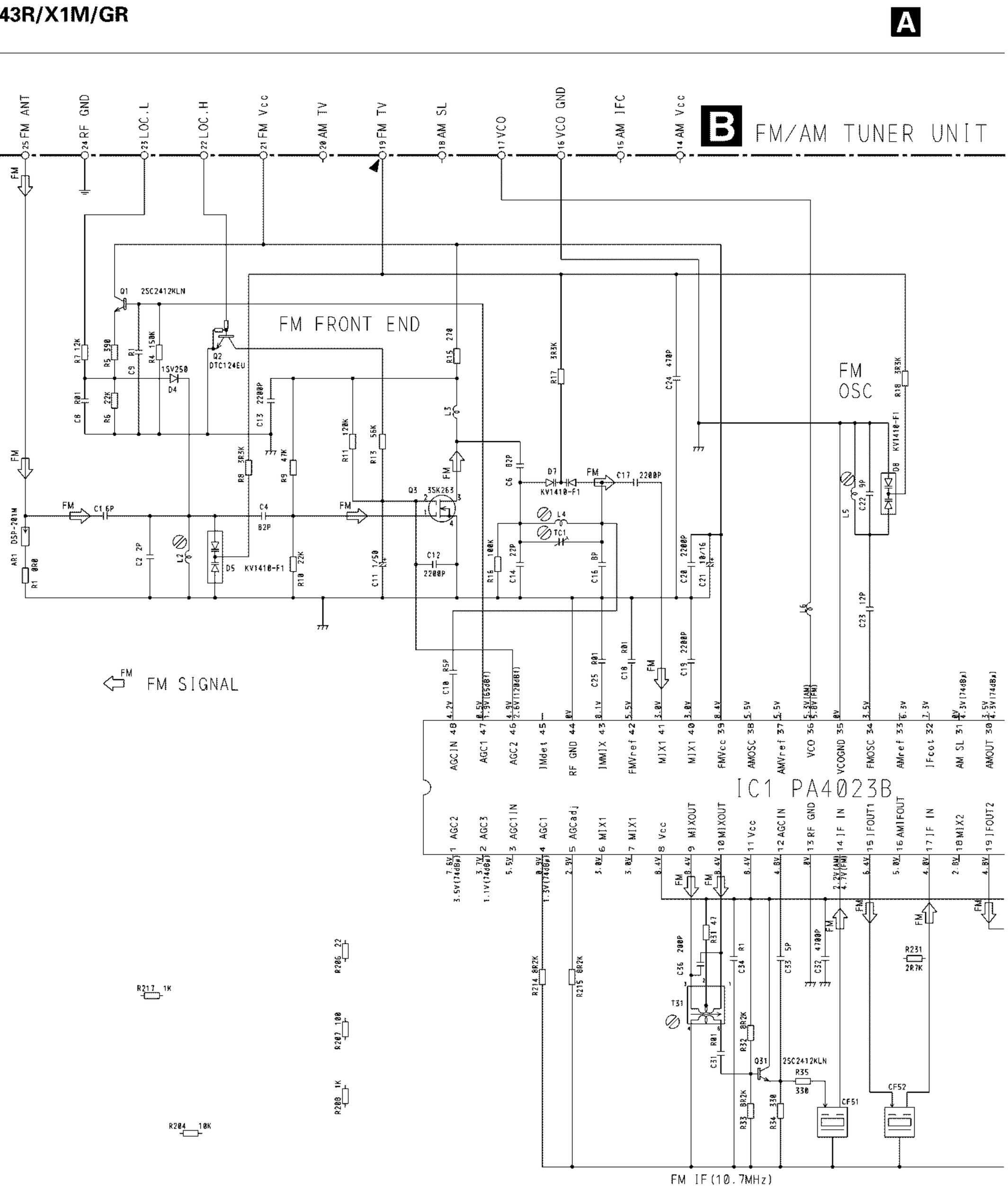

UNIT
AM DET
AM AF OUT
AM 2ND IF (450KHz)
FM MPX
PNS
IC2 PA4024A
FM IF
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 GATE DRIVE
4 MONO/REQ
3 ST
2 COMP
1 AF GND
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCτ
31 ENVτ
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDτ
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEτ 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
X151 CSS1365
X151:918.5Hz
Q154 DTC124EU
VR154 150K(B)
CCP1213
TP3 CENTER METER
TP4 CENTER METER
TP5ENV
TP7PNS
TP6
CF232
CF53
Q165 2SC2412KLN
X231 10.26MHz
T51
AM
FM
FM/AM

Fig. 12

● DEH-343R/X1M/GR



ClibPDF - www.fastio.com

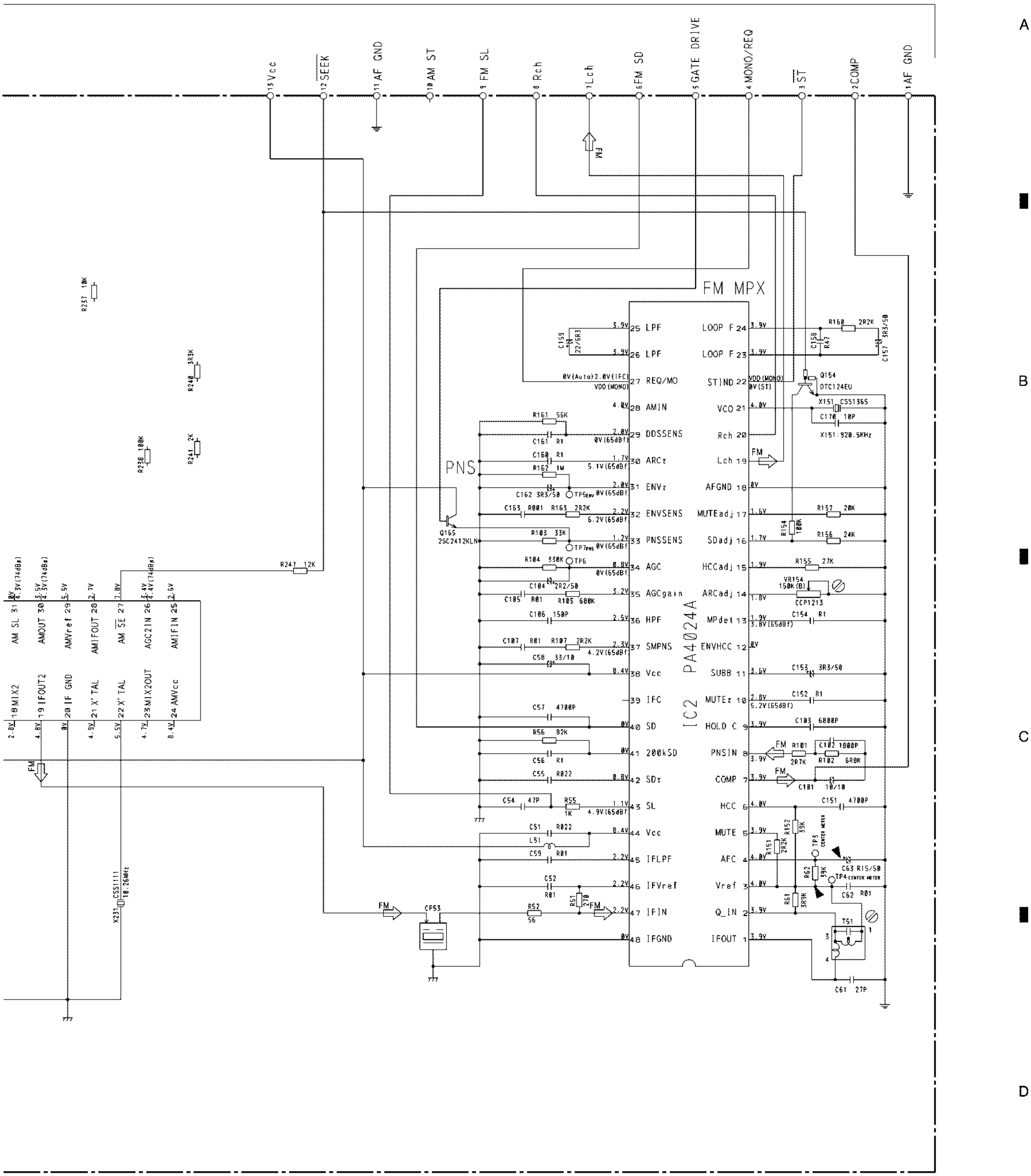
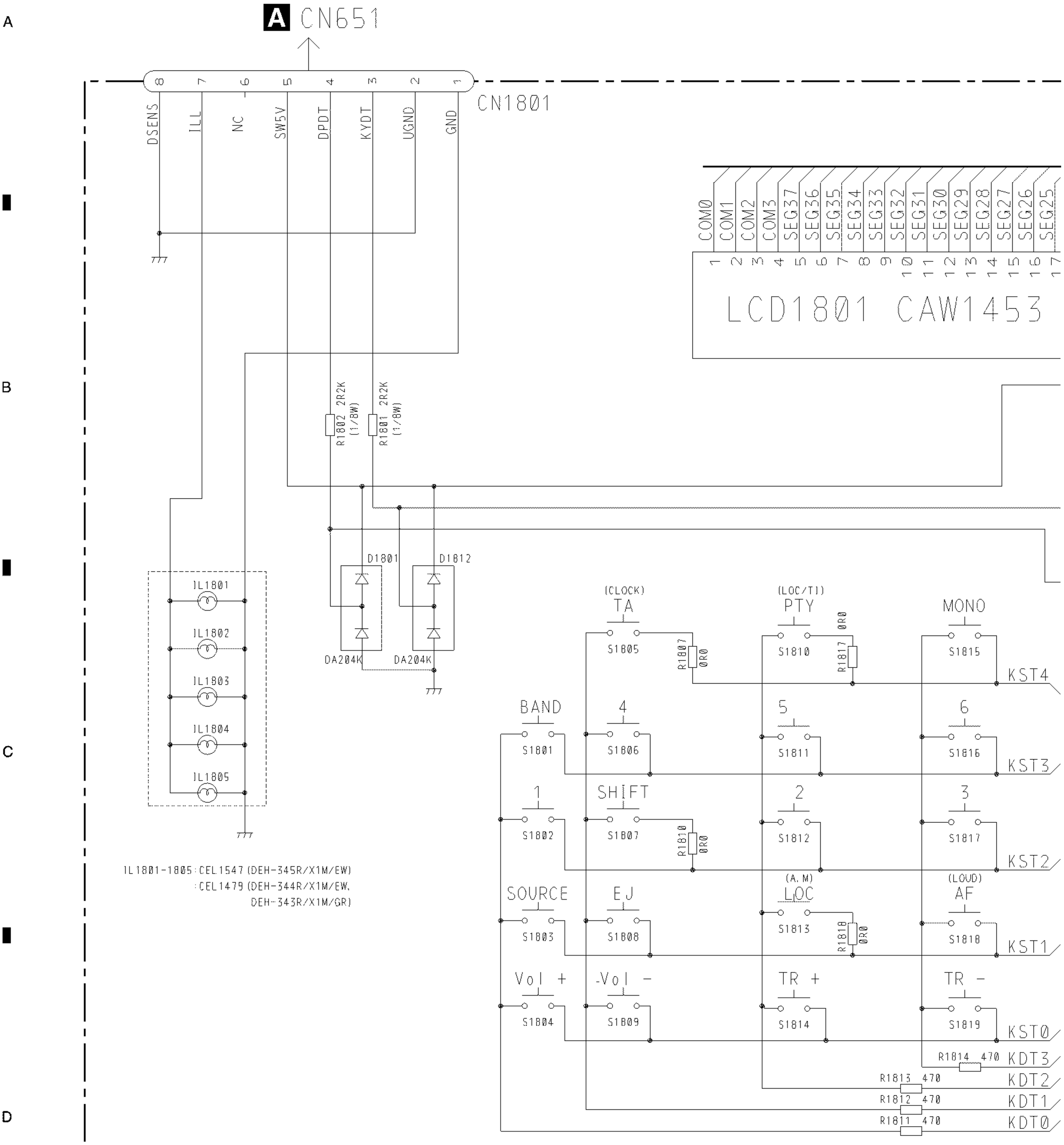


Fig. 13

ClibPDF - www.fastio.com

3.4 KEYBOARD UNIT



IL1801-1805 : CEL1547 (DEH-345R/X1M/EW)
: CEL1479 (DEH-344R/X1M/EW, DEH-343R/X1M/GR)

ClibPDF - www.fastio.com

5 6 7 8

C KEYBOARD UNIT

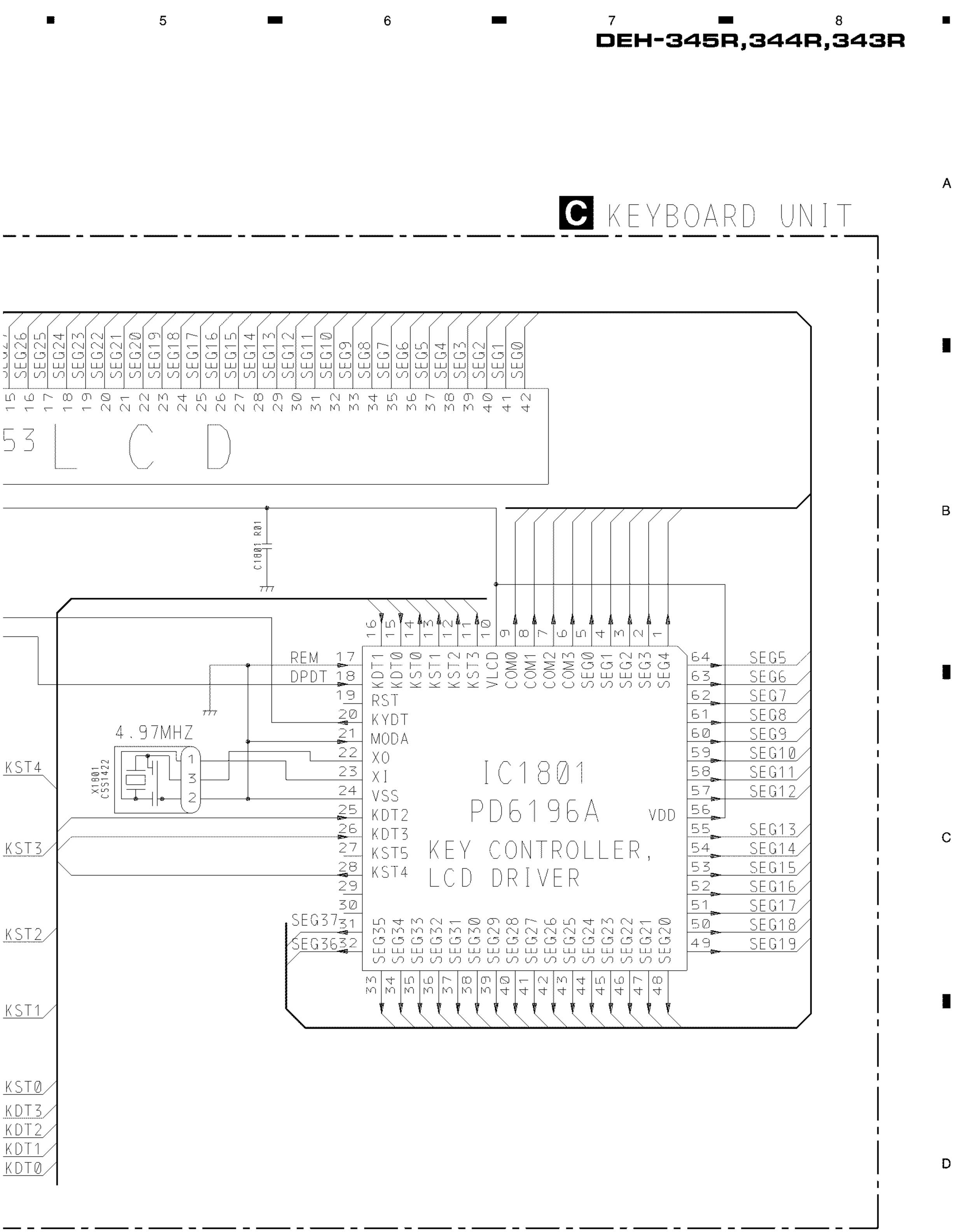


Fig. 14

5 6 7 8

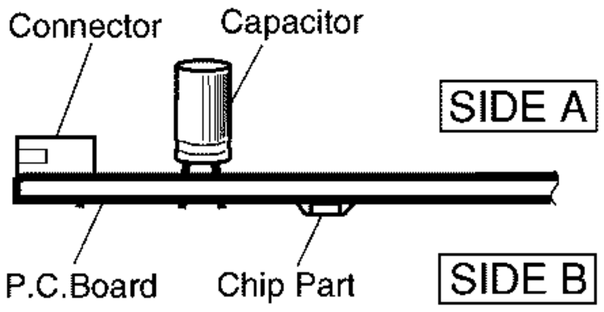
ClibPDF - www.fastio.com

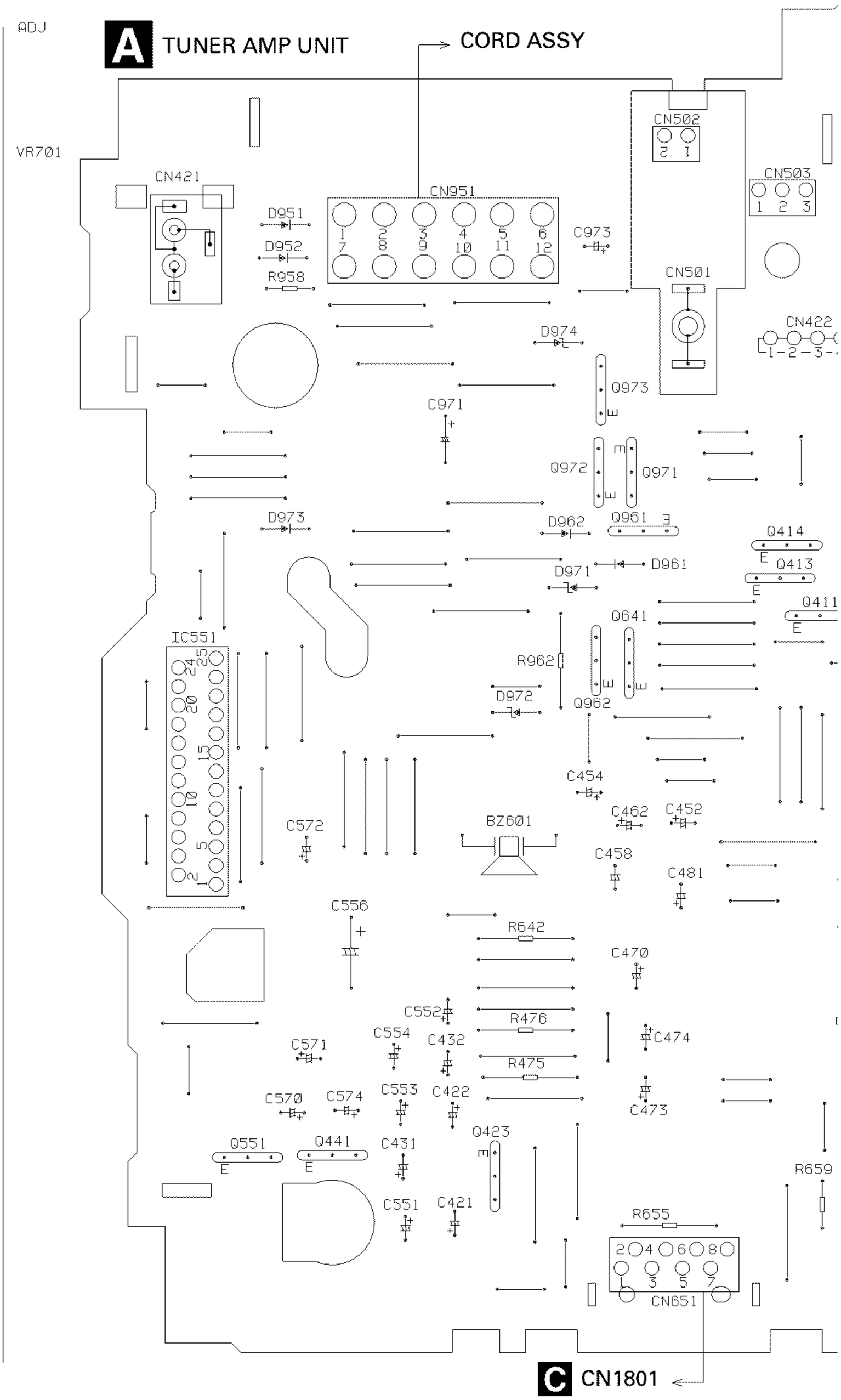
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams





SIDE A

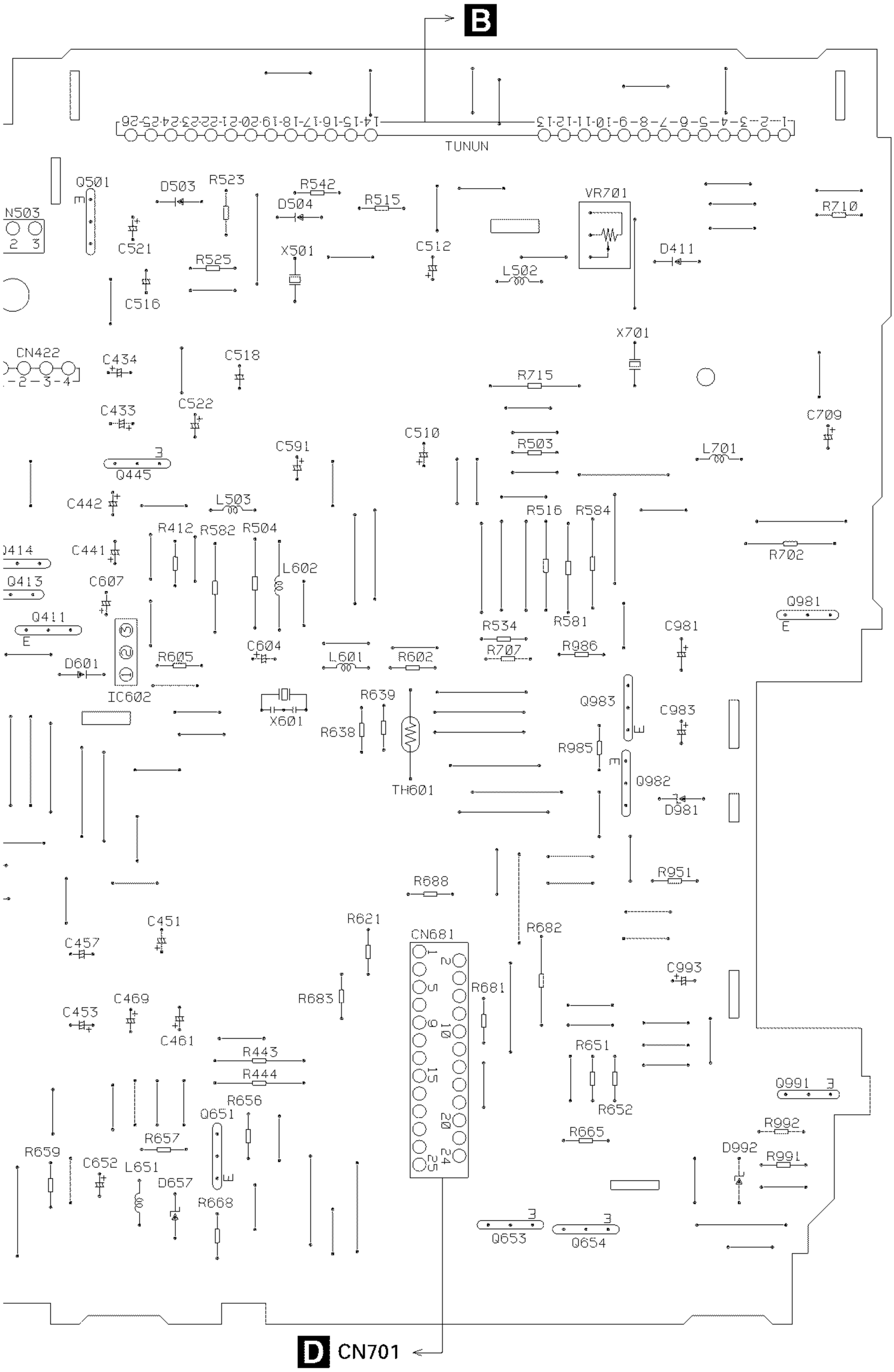
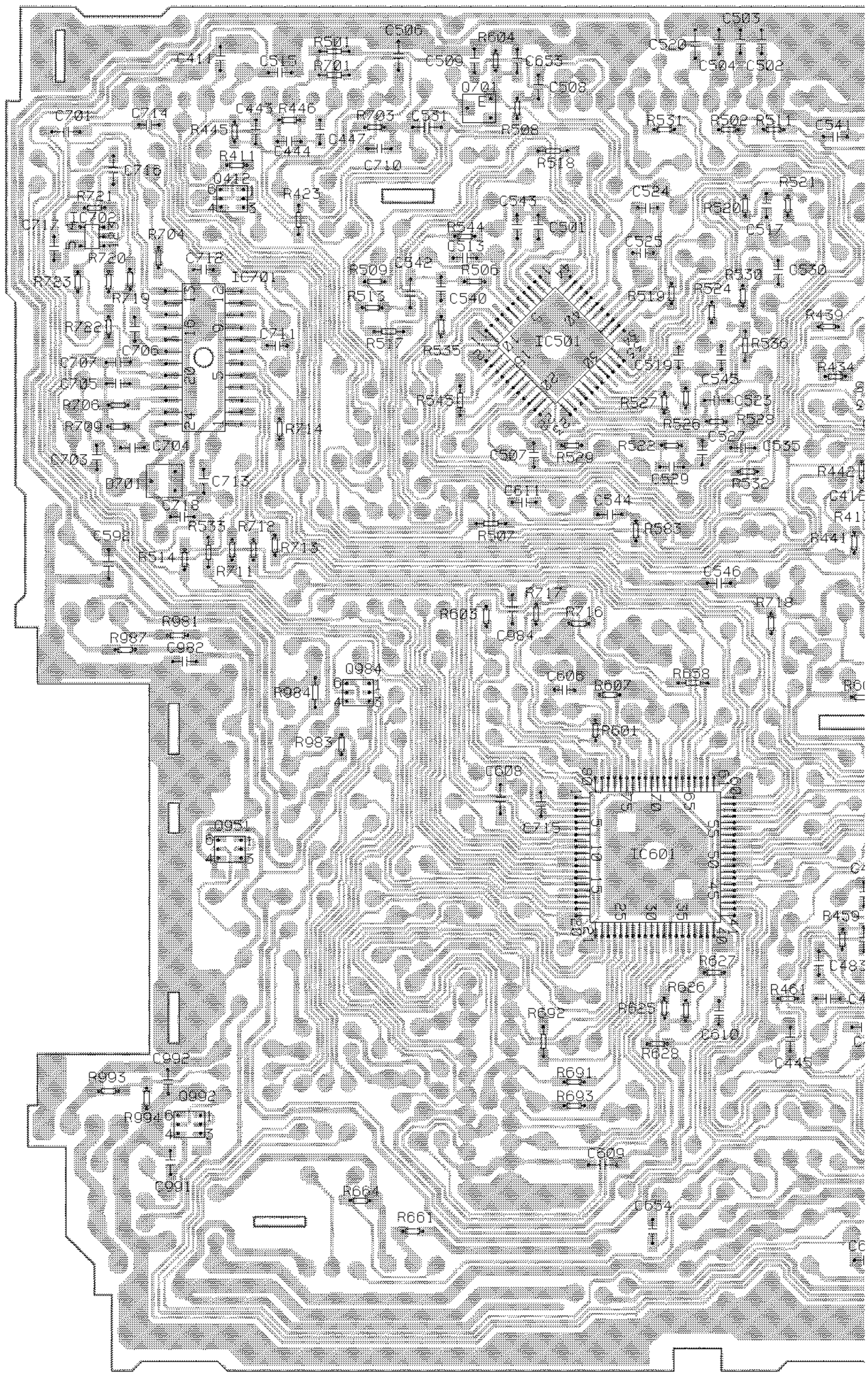


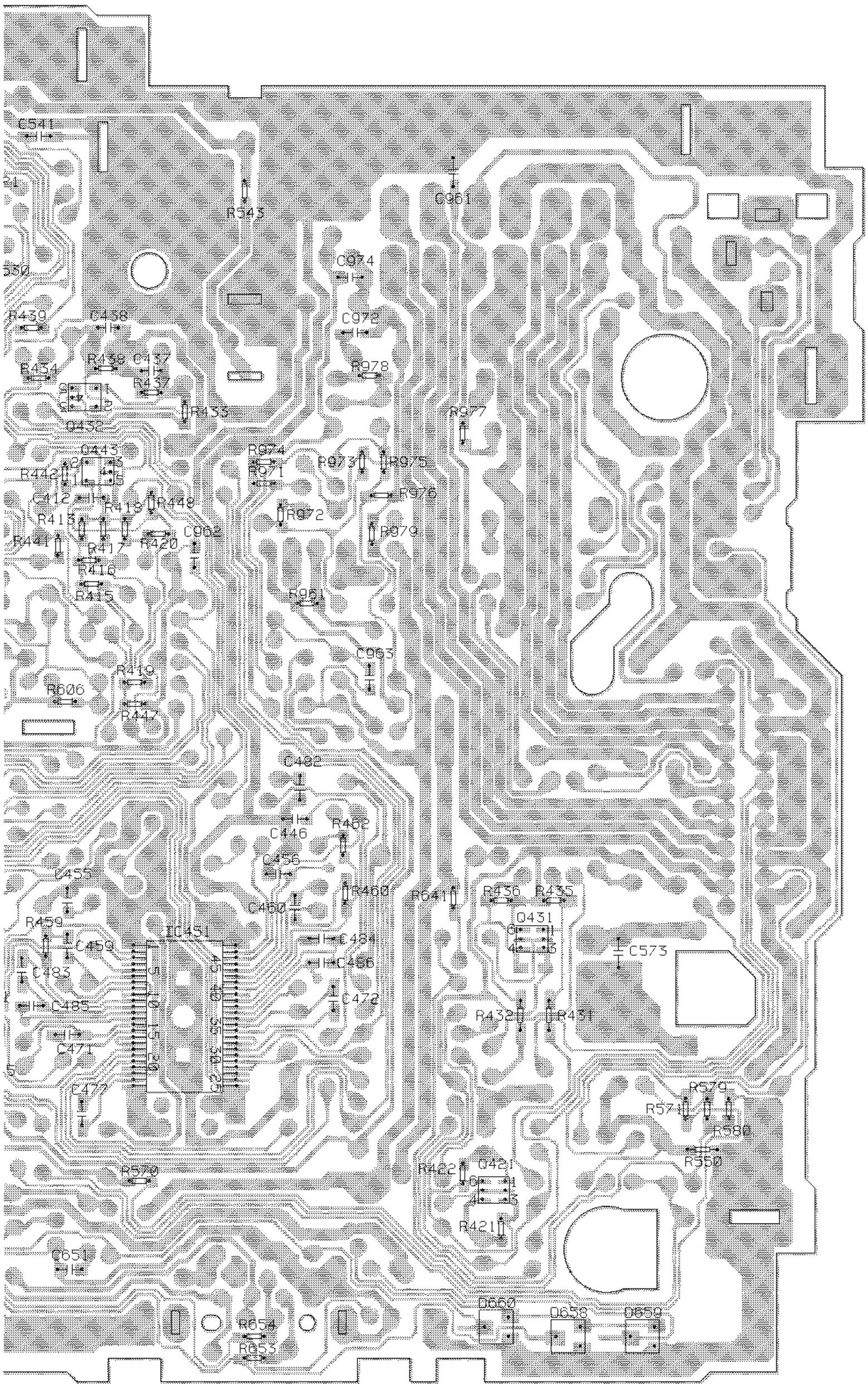
Fig. 15

ClibPDF - www.fastio.com

A TUNER AMP UNIT



SIDE B



IC, Q

Q701

Q412

IC702

IC701

IC501

Q432
Q443

Q984

Q951
IC601

Q431
IC451

Q992

Q421

Fig. 16

ClibPDF - www.fastio.com

4.2 FM/AM TUNER UNIT

SIDE A

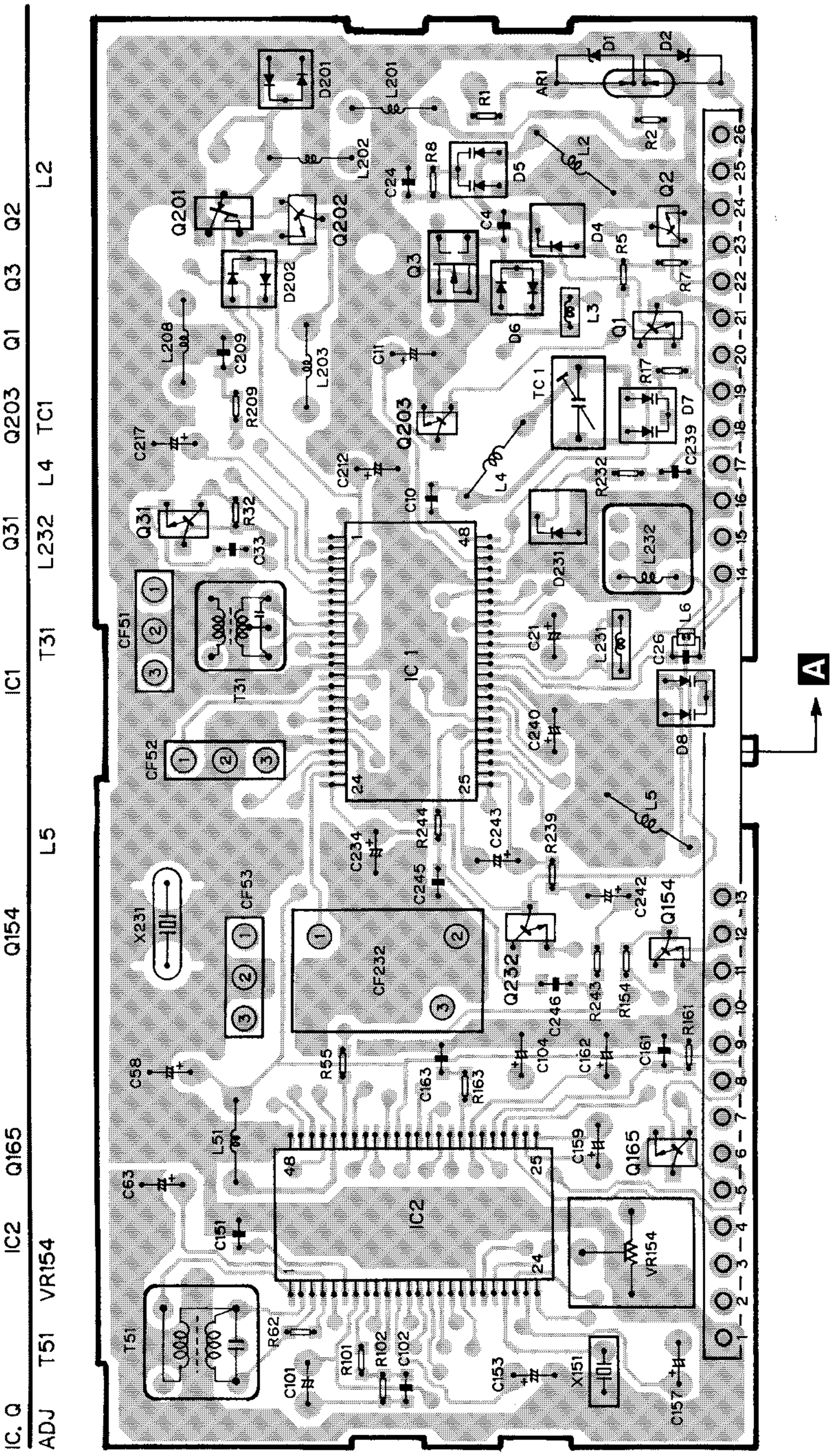
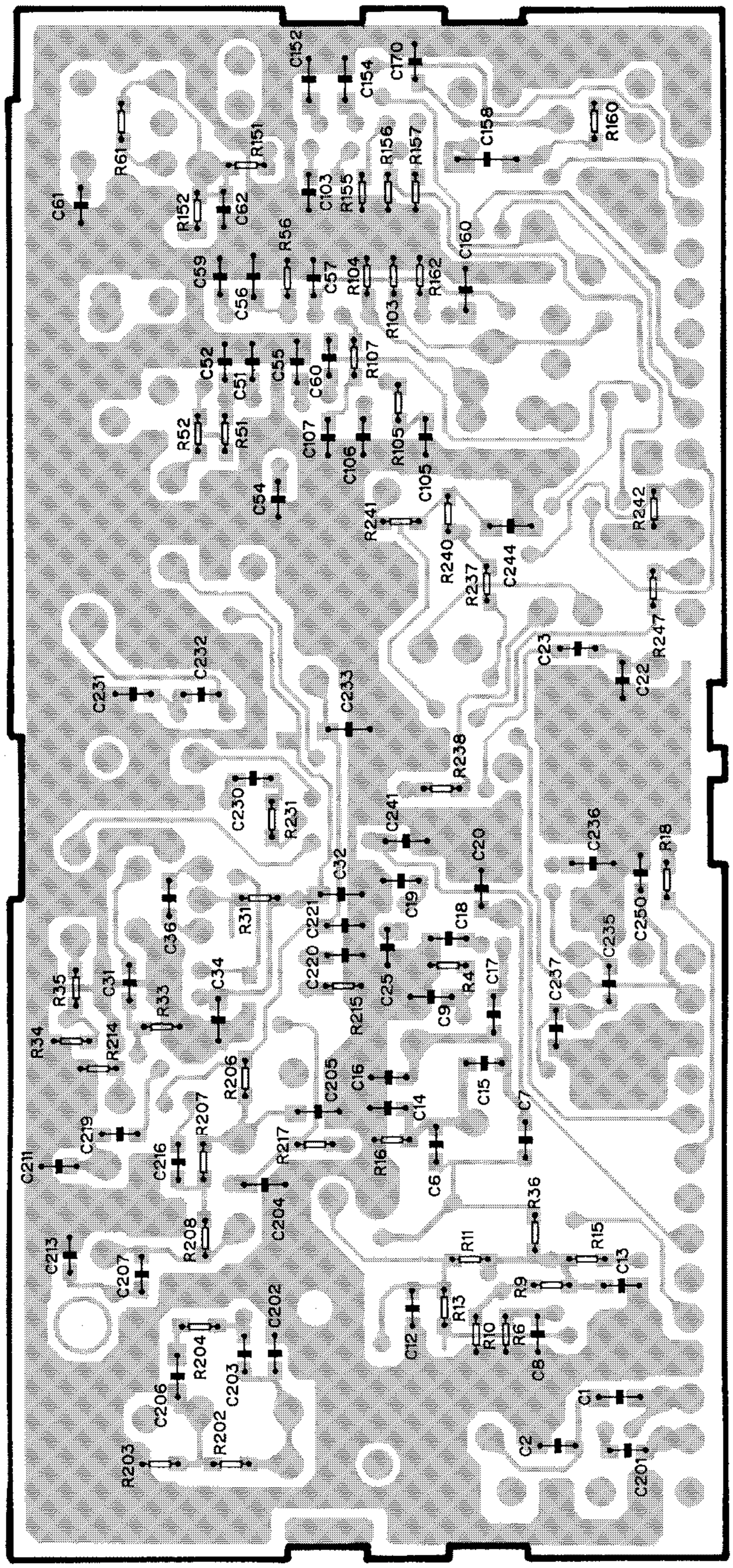


Fig. 17

ClibPDF - www.fastio.com

SIDE B



B FM/AM TUNER UNIT

Fig. 18

ClibPDF - www.fastio.com

4.3 CD MECHANISM MODULE

SIDE A

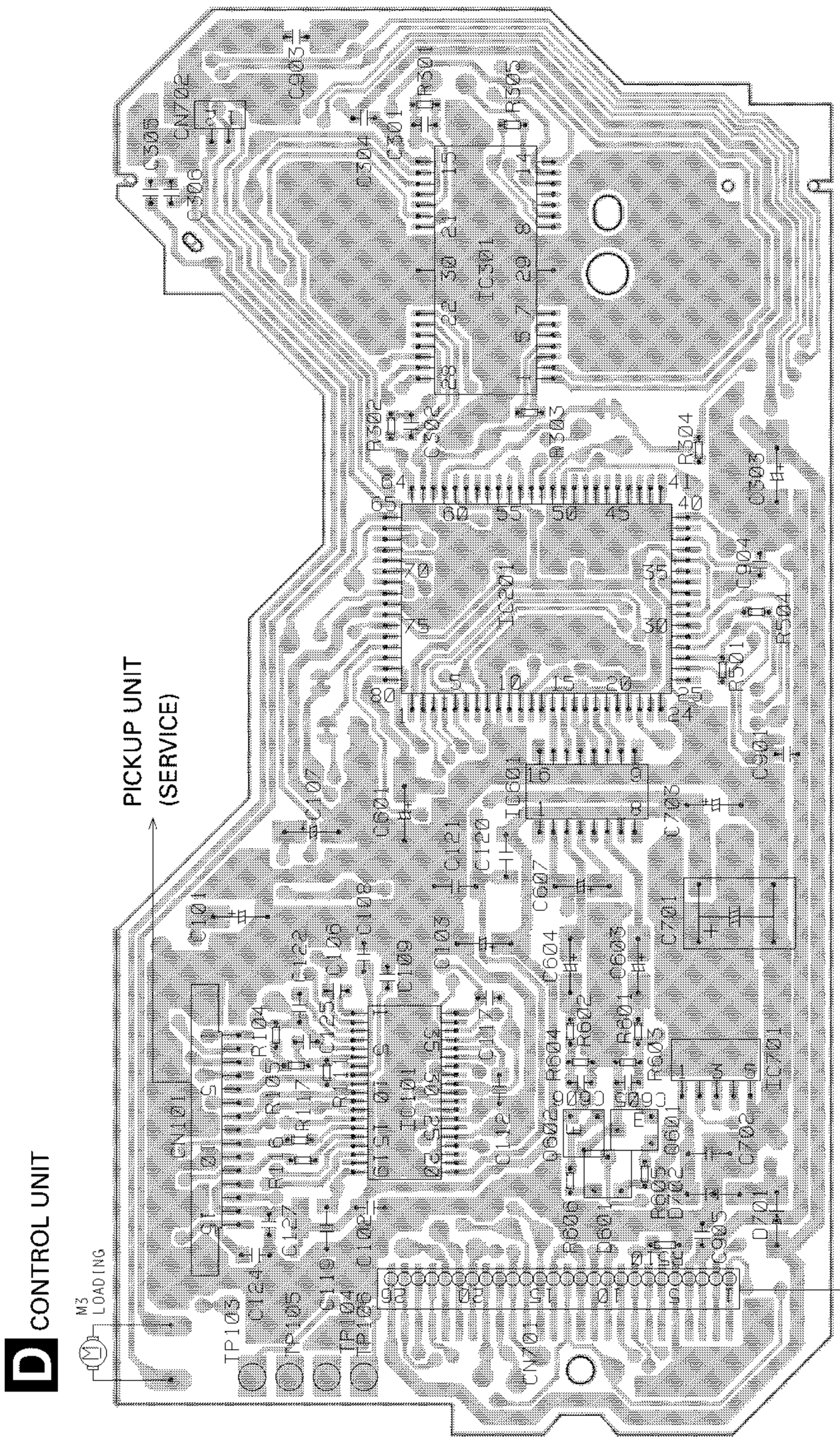


Fig. 19

SIDE B

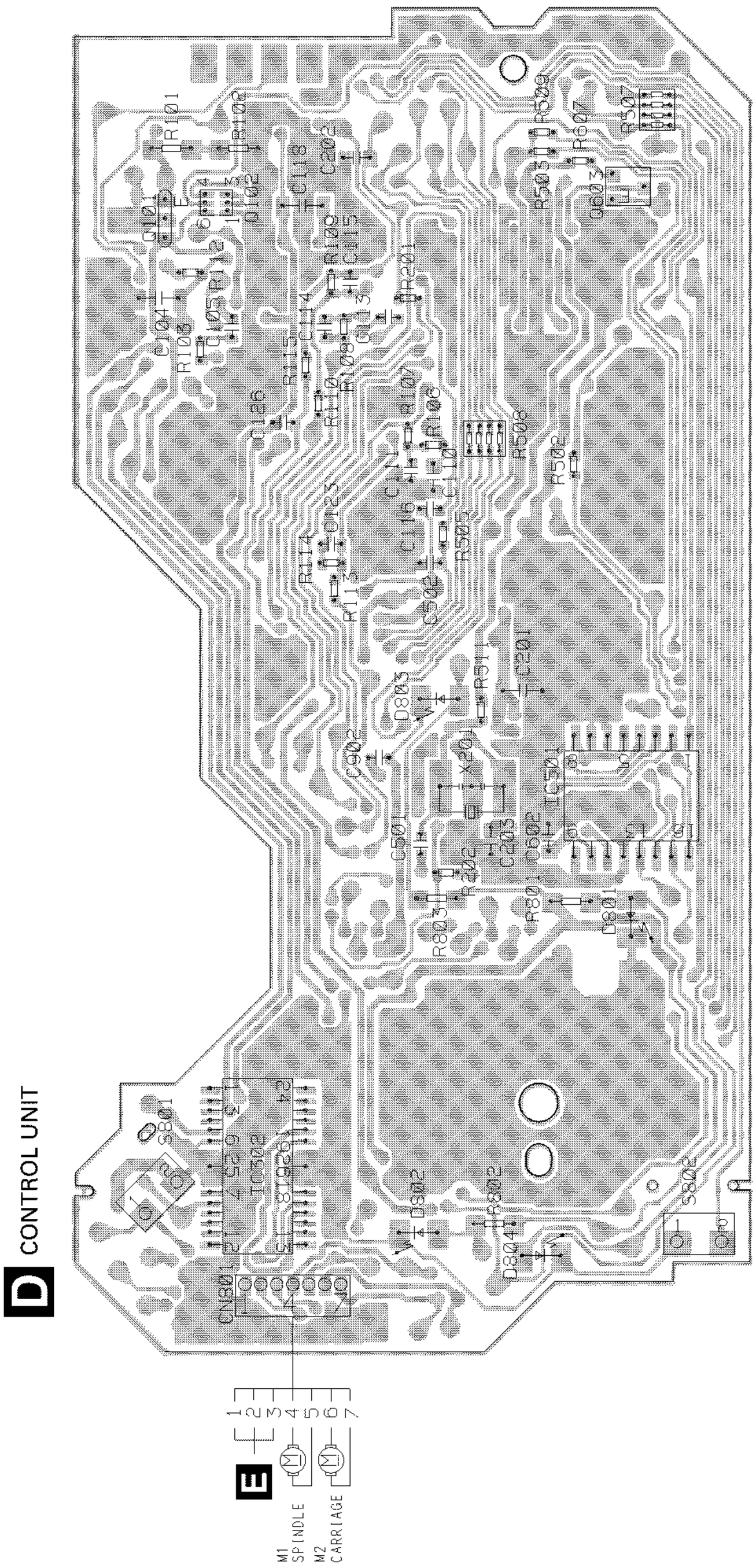

IC,Q
Q101
Q102
IC302
IC501
Q603
CONTROL UNIT
CN801
CN802
M1
SPINDLE
M2
CARRIAGE

Fig. 20

4.4 KEYBOARD UNIT

SIDE A

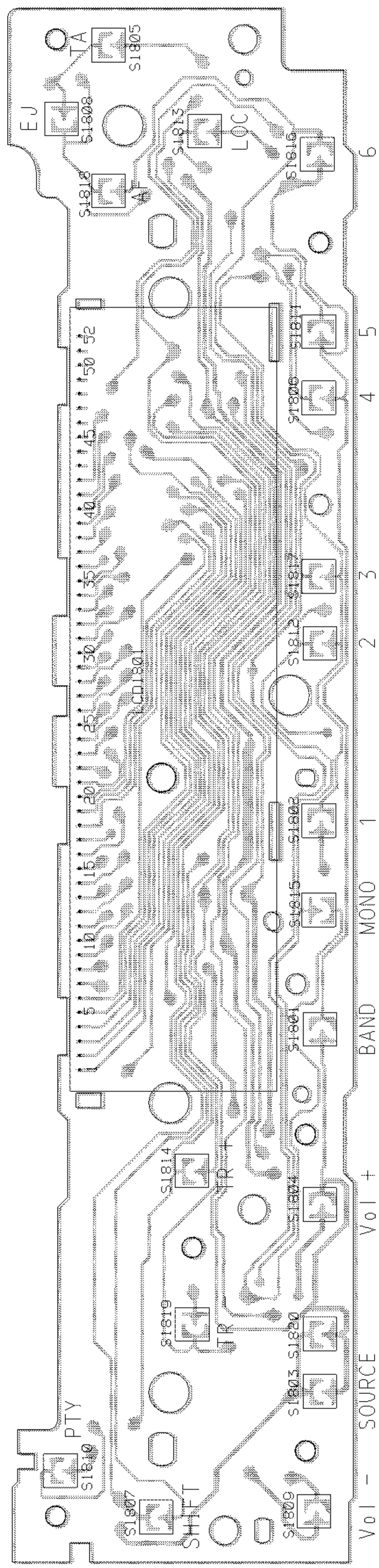


Fig. 21

ClibPDF - www.fastio.com

SIDE B

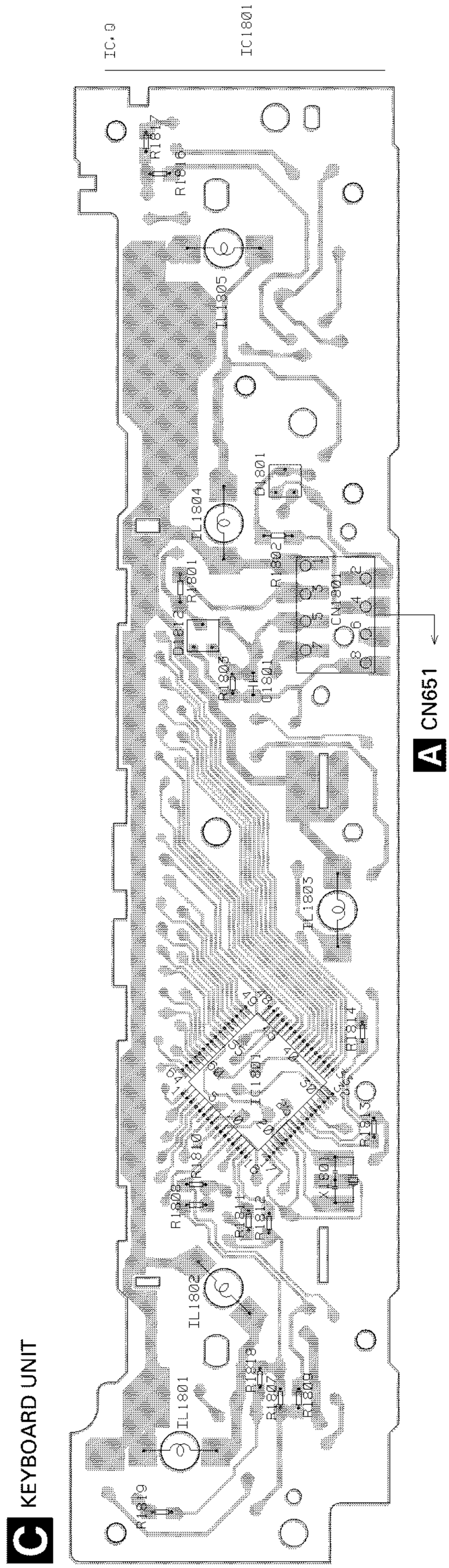


Fig. 22

ClibPDF - www.fastio.com

5. ELECTRICAL PARTS LIST

NOTES:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

  Chip Resistor

  RS1/○S○○○J,RS1/○○S○○○J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....

B Unit Number : CWE1466
Unit Name : FM/AM Tuner Unit(DEH-345R/X1M/EW)
(DEH-344R/X1M/EW)

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412KLN
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412KLN
Q	154	Transistor	DTC124EU
Q	165	Transistor	2SC2412KLN
Q	201	FET	2SK932
Q	202	Transistor	2SC2412KLN
Q	203	Transistor	DTC124EU
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1133
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1133
L	5	Coil	CTC1132
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1116
T	51	Coil	CTC1136
TC	1		CCL1038
CF	51	Ceramic Filter	CTF1292
CF	52	Ceramic Filter	CTF1292
CF	53	Ceramic Filter	CTF1292
CF	232	Ceramic Filter	CTF1348
X	151	Resonator 920.5kHz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213
AR	1		DSP-201M

RESISTORS

=====Circuit Symbol and No.		===Part Name	Part No.
R	1		RS1/16S0R0J
R	4		RS1/16S154J
R	5		RS1/16S391J
R	6		RS1/16S223J
R	7		RS1/16S123J
R	8		RS1/16S332J
R	9		RS1/16S473J
R	10		RS1/16S223J
R	11		RS1/16S124J
R	13		RS1/16S563J
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S393J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	154		RS1/16S104J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S222J
R	202		RS1/16S223J
R	203		RS1/16S225J
R	204		RS1/16S103J
R	206		RS1/16S220J
R	207		RS1/16S101J
R	208		RS1/16S102J
R	209		RS1/16S471J
R	214		RS1/16S822J
R	215		RS1/16S822J
R	217		RS1/16S102J
R	231		RS1/16S272J
R	232		RS1/16S473J
R	237		RS1/16S103J
R	238		RS1/16S104J
R	239		RS1/16S104J
R	240		RS1/16S332J
R	241		RS1/16S202J
R	243		RS1/16S123J
R	244		RS1/16S103J

ClibPDF - www.fastio.com

=====Circuit Symbol and No.	===Part Name	Part No.
R	247	RS1/16S123J
CAPACITORS		
C	1	CCSQCH6R0D50
C	2	CCSRCK2R0C50
C	4	CCSRCH820J50
C	6	CCSRCH820J50
C	8	CKSRYB103K25
C	9	CKSQYB104K16
C	10	CCSRCKR50C50
C	11	CEJA1R0M50
C	12	CKSRYB222K50
C	13	CKSRYB222K50
C	14	CCSRCH220J50
C	16	CCSRCH8R0D50
C	17	CKSRYB222K50
C	18	CKSRYB103K25
C	19	CKSRYB222K50
C	20	CKSRYB222K50
C	21	CEJA100M16
C	22	CCSRTH9R0D50
C	23	CCSRTH120J50
C	24	CCSRCH471J50
C	25	CKSRYB103K25
C	31	CKSRYB103K25
C	32	CKSQYB472K50
C	33	CCSRCH5R0C50
C	34	CKSQYB104K16
C	36	CCSRRH201J50
C	51	CKSRYB223K25
C	52	CKSRYB103K25
C	54	CCSRCH470J50
C	55	CKSQYB223K25
C	56	CKSQYB104K16
C	57	CKSRYB472K50
C	58	CEJA330M10
C	59	CKSRYB103K25
C	61	CCSRCH270J50
C	62	CKSRYB103K25
C	63	CEJAR15M50
C	101	CEJANP100M10
C	102	CKSRYB182K50
C	103	CKSRYB682K25
C	104	CEJA2R2M50
C	105	CKSRYB103K25
C	106	CCSRCH151J50
C	107	CKSRYB103K25
C	151	CKSRYB472K50
C	152	CKSQYB104K16
C	153	CEJA3R3M50
C	154	CKSQYB104K16
C	157	CEJA3R3M50
C	158	CKSYB474K16
C	159	CEJA220M6R3
C	160	CKSQYB104K16
C	161	CKSQYB104K16
C	162	CEJA3R3M50
C	163	CKSRYB102K50
C	170	CCSRCH100D50
C	201	CCSRCH471J50
C	202	CCSRCH100D50
C	203	CKSRYB332K50
C	204	CKSQYB473K16
C	205	CKSQYB473K16
C	206	CKSQYB104K16
C	207	CCSRCH560J50
C	209	CKSQYB104K16
C	211	CCSRCH101J50
C	212	CEJA470M6R3
C	213	CKSRYB103K25
C	216	CCSRCH101J50
C	217	CEJA1R5M50
C	219	CCSRCH471J50
C	220	CKSRYB103K25
C	230	CKSRYB103K25
C	231	CCSRCH330J50
C	232	CCSRCH150J50
C	233	CKSQYB104K16
C	234	CEJA330M10
C	235	CKSRYB332K50
C	236	CKSQYB473K16
C	237	CCSRCH120J50
C	239	CKSRYB472K50
C	240	CEJAR47M50
C	241	CKSQYB104K16
C	242	CEJAR47M50
C	243	CEJAR33M50
C	244	CKSQYB473K16
C	245	CKSRYB123K25
C	246	CKSQYB473K16
C	250	CCSRCH471J50

B Unit Number : CWE1470
Unit Name : FM/AM Tuner Unit(DEH-343R/X1M/GR)

MISCELLANEOUS

IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412KLN
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412KLN
Q	154	Transistor	DTC124EU
Q	165	Transistor	2SC2412KLN
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
L	2	Coil	CTC1133
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1133
L	5	Coil	CTC1132
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
T	31	Coil	CTE1117
T	51	Coil	CTC1136
TC	1		CCL1046
CF	51	Ceramic Filter	CTF1292
CF	52	Ceramic Filter	CTF1292
CF	53	Ceramic Filter	CTF1292
X	151	Resonator 920.5kHz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213
AR	1		DSP-201M

RESISTORS

R	1	RS1/16S0R0J
R	4	RS1/16S154J
R	5	RS1/16S391J
R	6	RS1/16S223J
R	7	RS1/16S123J
R	8	RS1/16S332J
R	9	RS1/16S473J
R	10	RS1/16S223J
R	11	RS1/16S124J
R	13	RS1/16S563J

ClibPDF - www.fastio.com

Circuit Symbol and No.		Part Name	Part No.
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S393J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	154		RS1/16S104J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S222J

CAPACITORS

C	1		CCSQCH6R0D50
C	2		CCSRCK2R0C50
C	4		CCSRCH820J50
C	6		CCSRCH820J50
C	8		CKSRYB103K25
C	9		CKSQYB104K16
C	10		CCSRCKR50C50
C	11		CEJA1R0M50
C	12		CKSRYB222K50
C	13		CKSRYB222K50
C	14		CCSRCH220J50
C	16		CCSRCH8R0D50
C	17		CKSRYB222K50
C	18		CKSRYB103K25
C	19		CKSRYB222K50
C	20		CKSRYB222K50
C	21		CEJA100M16
C	22		CCSRTH9R0D50
C	23		CCSRTH120J50
C	24		CCSRCH471J50
C	25		CKSRYB103K25
C	31		CKSRYB103K25
C	32		CKSQYB472K50
C	33		CCSRCH5R0C50
C	34		CKSQYB104K16
C	36		CCSRRH201J50
C	51		CKSRYB223K25
C	52		CKSRYB103K25
C	54		CCSRCH470J50
C	55		CKSQYB223K25
C	56		CKSQYB104K16
C	57		CKSRYB472K50
C	58		CEJA330M10
C	59		CKSRYB103K25
C	61		CCSRCH270J50

Circuit Symbol and No.		Part Name	Part No.
C	62		CKSRYB103K25
C	63		CEJAR15M50
C	101		CEJANP100M10
C	102		CKSRYB182K50
C	103		CKSRYB682K25
C	104		CEJA2R2M50
C	105		CKSRYB103K25
C	106		CCSRCH151J50
C	107		CKSRYB103K25
C	151		CKSRYB472K50
C	152		CKSQYB104K16
C	153		CEJA3R3M50
C	154		CKSQYB104K16
C	157		CEJA3R3M50
C	158		CKSYB474K16
C	159		CEJA220M6R3
C	160		CKSQYB104K16
C	161		CKSQYB104K16
C	162		CEJA3R3M50
C	163		CKSRYB102K50
C	170		CCSRCH100D50

D Unit Number : CWX2210
Unit Name : Control Unit(S7)

MISCELLANEOUS

IC	101	IC	UPC2572GS
IC	201	IC	UPD63702AGF
IC	301	IC	BA6997FM
IC	302	IC	BA6285FP
IC	601	IC	TA2063F
IC	701	IC	PQ05TZ51
Q	101	Transistor	2SD1664
Q	102	Transistor	UMD2N
D	701	Diode	1SR154-400
D	702	Diode	1SR154-400
D	801		CL200IRX
D	802		CL200IRX
X	201	Ceramic Resonator 16.93MHz	CSS1363
S	801	Switch(Home)	CSN1028
S	802	Switch(Clamp)	CSN1028

RESISTORS

R	101		RS1/8S100J
R	102		RS1/8S120J
R	103		RS1/16S102J
R	104		RS1/16S822J
R	105		RS1/16S682J
R	106		RS1/16S183J
R	107		RS1/16S822J
R	108		RS1/16S333J
R	109		RS1/16S683J
R	110		RS1/16S134J
R	111		RS1/16S273J
R	112		RS1/16S222J
R	113		RS1/16S103J
R	114		RS1/16S103J
R	115		RS1/16S102J
R	116		RS1/16S163J
R	117		RS1/16S163J
R	201		RS1/16S104J
R	202		RS1/16S473J
R	304		RS1/16S0R0J
R	501		RS1/16S0R0J
R	505		RS1/16S102J
R	507		RA4C102J
R	508		RA4C681J
R	510		RS1/10S0R0J

ClibPDF - www.fastio.com

=====Circuit Symbol and No.		===Part Name	Part No.
R	601		RS1/16S102J
R	602		RS1/16S102J
R	603		RS1/16S223J
R	604		RS1/16S223J
R	801		RS1/8S751J
R	802		RS1/8S751J
CAPACITORS			
C	101		CEV101M6R3
C	102		CKSQYB104K16
C	103		CEV470M6R3
C	104		CKSYB334K16
C	105		CCSRCH330J50
C	106		CKSRYB103K25
C	107		CEV4R7M35
C	108		CKSQYB273K50
C	109		CCSRCH101J50
C	110		CKSQYB104K16
C	111		CKSRYB332K50
C	112		CKSQYB473K16
C	113		CKSRYB103K25
C	114		CKSRYB391K50
C	115		CCSRCH121J50
C	116		CKSRYB682K25
C	117		CKSRYB333K16
C	118		CKSYB334K16
C	119		CKSYB334K16
C	120		CKSYB334K16
C	121		CKSYB334K16
C	122		CKSQYB104K16
C	123		CKSRYB472K50
C	124		CKSQYB104K16
C	125		CCSRCH6R0D50
C	126		CKSRYB153K25
C	127		CCSRCH102J25
C	201		CKSYB334K16
C	202		CKSQYB104K16
C	203		CKSQYB104K16
C	303		CEV470M16
C	304		CKSRYB103K25
C	305		CKSRYB103K25
C	306		CKSRYB103K25
C	502		CKSRYB471K50
C	601		CEV101M6R3
C	602		CKSQYB104K16
C	603		CEV4R7M35
C	604		CEV4R7M35
C	605		CKSRYB152K50
C	606		CKSRYB152K50
C	607		CEV220M6R3
C	701	22µF/6.3V	CCH1233
C	702		CKSYB334K16
C	703		CEV101M6R3
C	901		CCSRCH471J50
C	902		CCSRCH271J50
C	903		CCSRCH471J50
C	904		CCSRCH101J50

A Unit Number : CWM5562
Unit Name : Tuner Amp Unit(DEH-345R/X1M/EW)
(DEH-344R/X1M/EW)

MISCELLANEOUS

IC	451	IC	SN761027DL
IC	501	IC	PM2007A
IC	551	IC	TDA7384A
IC	601	IC	PD4888A
IC	602	IC	S-80734AN

=====Circuit Symbol and No.		===Part Name	Part No.
IC	701	IC	PM4006B
IC	702	IC	TA75S393F
Q	411	Transistor	2SC1740S
Q	412	Transistor	IMD2A
Q	413	Transistor	2SD1468S
Q	414	Transistor	2SD1468S
Q	421	Transistor	IMH3A
Q	423	Transistor	DTA124ES
Q	431	Transistor	IMH3A
Q	441	Transistor	DTA124ES
Q	443	Transistor	FMG3A
Q	445	Transistor	DTC144ES
Q	501	Transistor	2SC1740S
Q	551	Transistor	DTC144ES
Q	641	Transistor	DTC114ES
Q	651	Transistor	2SA933S
Q	653	Transistor	2SB1236
Q	654	Transistor	DTC124ES
Q	701	Transistor	2SC2412K
Q	951	Transistor	IMD3A
Q	961	Transistor	2SB1243
Q	962	Transistor	DTC114ES
Q	971	Transistor	2SC1740S
Q	972	Transistor	2SC1740S
Q	973	Transistor	2SD1859
Q	981	Transistor	2SD2396
Q	982	Transistor	2SA1674
Q	983	Transistor	2SA1674
Q	984	Transistor	IMH1A
Q	991	Transistor	2SD2396
Q	992	Transistor	IMD2A
D	411	Diode	1SS133
D	503	Diode	1SS133
D	601	Diode	1SS133
D	657	Diode	MTZ5R6J(C)
D	658	Diode	MA153
D	659	Diode	MA153
D	660	Diode	MA153
D	701	Diode	MA3051(M)
D	951	Diode	1SR139-400
D	952	Diode	1SR139-400
D	961	Diode	1SR139-400
D	962	Diode	1SR139-400
D	971	Diode	HZS6L(C3)
D	972	Diode	HZS7L(C2)
D	973	Diode	1SR139-400
D	974	Diode	HZS6L(B1)
D	981	Diode	HZS9L(B3)
D	992	Diode	HZS9L(B1)
L	502	Ferri-Inductor	LAU2R2K
L	503	Ferri-Inductor	LAU2R2K
L	601	Ferri-Inductor	LAU2R2K
L	602	Ferri-Inductor	LAU101K
L	651	Ferri-Inductor	LAU101K
L	701	Ferri-Inductor	LAU101K
TH	601	Thermistor	CCX1031
X	501	Crystal Resonator 7.200MHz	CSS1379
X	601	Ceramic Resonator 4.194MHz	CSS1047
X	701	Crystal Resonator 4.332MHz	CSS1056
VR	701	Semi-fixed 22kΩ(B)	CCP1321
BZ	601	Buzzer	CPV1011
		FM/AM Tuner Unit	CWE1466

RESISTORS

R	411		RS1/10S105J
R	412		RD1/4PU472J
R	413		RS1/10S224J
R	415		RS1/10S224J
R	416		RS1/10S224J

ClibPDF - www.fastio.com

=====Circuit Symbol and No.===Part Name			Part No.	=====Circuit Symbol and No.===Part Name			Part No.
R	417		RS1/10S223J	R	582		RD1/4PU102J
R	418		RS1/10S223J	R	583		RS1/10S562J
R	419		RS1/10S222J	R	584		RD1/4PU102J
R	420		RS1/10S222J	R	601		RN1/10SE2202D
R	421		RS1/10S104J	R	602		RD1/4PU912J
R	422		RS1/10S104J	R	603		RS1/10S104J
R	423		RS1/8S0R0J	R	604		RS1/10S393J
R	431		RS1/8S471J	R	605		RD1/4PU102J
R	432		RS1/8S471J	R	606		RS1/10S124J
R	435		RS1/10S223J	R	607		RS1/10S473J
R	436		RS1/10S223J	R	621		RD1/4PU473J
R	439		RS1/10S472J	R	625		RS1/10S0R0J
R	443		RD1/4PU222J	R	626		RS1/10S0R0J
R	444		RD1/4PU222J	R	638		RD1/4PU473J
R	445		RS1/10S272J	R	639		RD1/4PU473J
R	446		RS1/10S272J	R	641		RS1/10S202J
R	447		RS1/10S104J	R	642		RD1/4PU102J
R	448		RS1/10S104J	R	651		RD1/4PU472J
R	459		RS1/10S272J	R	652		RD1/4PU472J
R	460		RS1/10S272J	R	653		RS1/10S222J
R	461		RS1/10S151J	R	654		RS1/10S222J
R	462		RS1/10S151J	R	655		RD1/4PU222J
R	475		RD1/4PU471J	R	656		RD1/4PU472J
R	476		RD1/4PU471J	R	657		RD1/4PU222J
R	502		RS1/10S222J	R	658		RS1/8S222J
R	503		RD1/4PU472J	R	659		RD1/4PU473J
R	504		RD1/4PU223J	R	661		RS1/10S1R0J
R	506		RS1/10S0R0J	R	664		RS1/10S472J
R	507		RS1/8S473J	R	665		RD1/4PU102J
R	508		RS1/10S102J	R	668		RD1/4PU222J
R	509		RS1/10S472J	R	681		RD1/4PU222J
R	511		RS1/10S222J	R	682		RD1/4PU222J
R	513		RS1/10S472J	R	683		RD1/4PU222J
R	514		RS1/10S473J	R	688		RD1/4PU681J
R	515		RD1/4PU681J	R	691		RS1/10S102J
R	516		RD1/4PU681J	R	692		RS1/8S102J
R	517		RS1/8S681J	R	693		RS1/10S102J
R	518		RS1/10S681J	R	701		RS1/8S102J
R	519		RS1/10S392J	R	702		RD1/4PU151J
R	520		RS1/10S392J	R	703		RS1/10S103J
R	521		RS1/10S152J	R	707		RD1/4PU102J
R	522		RS1/10S682J	R	709		RS1/10S333J
R	523		RD1/4PU103J	R	710		RD1/4PU102J
R	524		RS1/10S561J	R	711		RS1/10S102J
R	525		RD1/4PU272J	R	712		RS1/10S102J
R	526		RS1/10S472J	R	713		RS1/10S102J
R	527		RS1/10S682J	R	714		RS1/10S102J
R	528		RS1/10S222J	R	715		RD1/4PU562J
R	529		RS1/10S472J	R	716		RS1/10S104J
R	530		RS1/10S222J	R	717		RS1/10S104J
R	531		RS1/10S103J	R	718		RS1/10S102J
R	532		RS1/10S224J	R	719		RS1/10S222J
R	533		RS1/8S473J	R	720		RS1/10S222J
R	534		RD1/4PU102J	R	721		RS1/10S684J
R	536		RS1/8S102J	R	722		RS1/10S681J
R	542		RD1/4PU0R0J	R	723		RS1/10S562J
R	543		RS1/10S0R0J	R	951		RD1/4PU471J
R	544		RS1/10S0R0J	R	958		RD1/4PU102J
R	545		RS1/8S0R0J	R	961		RS1/10S472J
R	550		RS1/8S0R0J	R	962		RD1/2PM561J
R	570		RS1/10S103J	R	971		RS1/10S473J
R	571		RS1/10S103J	R	972		RS1/10S103J
R	579		RS1/10S331J	R	973		RS1/10S473J
R	580		RS1/10S103J	R	974		RS1/10S473J
R	581		RD1/4PU102J	R	975		RS1/10S103J

ClibPDF - www.fastio.com

=====Circuit Symbol and No.	===Part Name	Part No.
R	976	RS1/10S473J
R	977	RS1/10S101J
R	978	RS1/10S472J
R	979	RS1/10S472J
R	981	RS1/10S1R0J
R	983	RS1/10S472J
R	984	RS1/8S472J
R	985	RD1/4PU102J
R	986	RD1/4PU102J
R	987	RS1/10S221J
R	991	RD1/4PU221J
R	992	RD1/4PU221J
R	993	RS1/10S472J
R	994	RS1/10S222J
CAPACITORS		
C	411	CKSQYB471K50
C	412	CKSQYB223K50
C	421	CEJA3R3M50
C	422	CEJA3R3M50
C	431	CEJA100M16
C	432	CEJA100M16
C	441	CEJA1R0M50
C	442	CEJA1R0M50
C	443	CKSQYB223K50
C	444	CKSQYB223K50
C	445	CKSQYB102K50
C	446	CKSQYB102K50
C	447	CKSQYB102K50
C	451	CEJA2R2M50
C	452	CEJA2R2M50
C	453	CEJA4R7M35
C	454	CEJA4R7M35
C	455	CKSQYB104K50
C	456	CKSQYB104K50
C	457	CEJANP100M16
C	458	CEJANP100M16
C	459	CKSQYB822K50
C	460	CKSQYB822K50
C	461	CEJA1R0M50
C	462	CEJA1R0M50
C	469	CEAL2R2M50
C	470	CEJA2R2M50
C	471	CKSQYB333K50
C	472	CKSQYB333K50
C	473	CEJA220M6R3
C	474	CEJA2R2M50
C	477	CKSQYB104K50
C	481	CEJA470M10
C	482	CKSQYB104K50
C	483	CKSQYB183K50
C	484	CKSQYB183K50
C	485	CKSQYB102K50
C	486	CKSQYB102K50
C	501	CKSQYB103K50
C	504	CKSQYB473K50
C	506	CKSYB103K50
C	507	CKSQYB102K50
C	508	CKSQYB103K50
C	510	CEJA220M10
C	512	CEJA220M10
C	513	CKSQYB473K50
C	515	CKSQYB223K50
C	516 4.7µF/16V	CCH1250
C	517	CKSQYB103K50
C	518 4.7µF/16V	CCH1250

=====Circuit Symbol and No.	===Part Name	Part No.
C	519	CKSQYB103K50
C	520	CKLSR473K16
C	521	CEASR47M50
C	522	CEJA220M10
C	523	CKSQYB104K50
C	524	CCSQCH150J50
C	525	CCSQCH150J50
C	527	CKSQYB103K50
C	529	CKSQYB103K50
C	530	CKSQYB103K50
C	531	CCSCH101J50
C	535	CKSQYB223K50
C	540	CKSQYB152K50
C	541	CKSQYB223K50
C	543	CKSQYB103K50
C	544	CKSQYB102K50
C	546	CCSQCH101J50
C	551	CEJAR22M50
C	552	CEJAR22M50
C	553	CEJAR22M50
C	554	CEJAR22M50
C	556 3300µF/16V	CCH1150
C	570	CEJA100M16
C	571	CEJA330M10
C	572	CEJA1R0M50
C	573	CKSYB104K50
C	574	CEJA1R0M50
C	591	CEJA220M10
C	592	CKSYB102K50
C	604	CEJA4R7M35
C	606	CKSQYB473K50
C	607	CEJA2R2M50
C	608	CKSYB102K50
C	610	CCSQCH101J50
C	611	CCSQCH101J50
C	651	CKSQYB473K50
C	652	CEJA4R7M35
C	654	CCSQCH101J50
C	701	CKSYB105K16
C	703	CKSQYB103K50
C	704	CKSQYB222K50
C	705	CKSQYB104K50
C	706	CKSQYB472K50
C	707	CKSQYB104K50
C	709	CEJA4R7M35
C	710	CKSQYB223K50
C	711	CCSQCH220J50
C	712	CCSQCH220J50
C	713	CKSQYB104K50
C	714	CKSQYB104K50
C	715	CKSQYB223K50
C	716	CKSYB103K50
C	717	CKSQYB103K50
C	718	CKSQYB102K50
C	961	CKSYB473K50
C	962	CCSQCH101J50
C	971 470µF/16V	CCH-114
C	972	CKSQYB473K50
C	973	CEJA101M10
C	974	CKSQYB473K50
C	981	CEAS331M10
C	982	CKSQYB103K50
C	983	CEJA101M16
C	984	CKSYB473K50
C	991	CKSQYB473K50
C	992	CKSQYB102K50
C	993	CEAL101M10

ClibPDF - www.fastio.com

A Unit Number : CWM5563
Unit Name : Tuner Amp Unit(DEH-343R/X1M/GR)

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	451	IC	SN761027DL
IC	501	IC	PM2007A
IC	551	IC	TDA7384A
IC	601	IC	PD4888A
IC	602	IC	S-80734AN
IC	701	IC	PM4006B
IC	702	IC	TA75S393F
Q	411	Transistor	2SC1740S
Q	412	Transistor	IMD2A
Q	413	Transistor	2SD1468S
Q	414	Transistor	2SD1468S
Q	431	Transistor	IMH3A
Q	441	Transistor	DTA124ES
Q	443	Transistor	FMG3A
Q	445	Transistor	DTC144ES
Q	501	Transistor	2SC1740S
Q	551	Transistor	DTC144ES
Q	641	Transistor	DTC114ES
Q	651	Transistor	2SA933S
Q	653	Transistor	2SB1236
Q	654	Transistor	DTC124ES
Q	701	Transistor	2SC2412K
Q	951	Transistor	IMD3A
Q	961	Transistor	2SB1243
Q	962	Transistor	DTC114ES
Q	971	Transistor	2SC1740S
Q	972	Transistor	2SC1740S
Q	973	Transistor	2SD1859
Q	981	Transistor	2SD2396
Q	982	Transistor	2SA1674
Q	984	Transistor	IMH1A
Q	991	Transistor	2SD2396
Q	992	Transistor	IMD2A
D	411	Diode	1SS133
D	503	Diode	1SS133
D	601	Diode	1SS133
D	657	Diode	MTZ5R6J(C)
D	658	Diode	MA153
D	659	Diode	MA153
D	660	Diode	MA153
D	701	Diode	MA3051(M)
D	951	Diode	1SR139-400
D	952	Diode	1SR139-400
D	961	Diode	1SR139-400
D	962	Diode	1SR139-400
D	971	Diode	HZS6L(C3)
D	972	Diode	HZS7L(C2)
D	973	Diode	1SR139-400
D	974	Diode	HZS6L(B1)
D	981	Diode	HZS9L(B3)
D	992	Diode	HZS9L(B1)
L	502	Ferri-Inductor	LAU2R2K
L	503	Ferri-Inductor	LAU2R2K
L	601	Ferri-Inductor	LAU2R2K
L	602	Ferri-Inductor	LAU101K
L	651	Ferri-Inductor	LAU101K
L	701	Ferri-Inductor	LAU101K
TH	601	Thermistor	CCX1031
X	501	Crystal Resonator 7.200MHz	CSS1379
X	601	Ceramic Resonator 4.194MHz	CSS1047
X	701	Crystal Resonator 4.332MHz	CSS1056
VR	701	Semi-fixed 22kΩ(B)	CCP1321
BZ	601	Buzzer	CPV1011
		FM/AM Tuner Unit	CWE1470

RESISTORS

=====Circuit Symbol and No.		===Part Name	Part No.
R	411		RS1/10S105J
R	412		RD1/4PU472J
R	413		RS1/10S224J
R	415		RS1/10S224J
R	416		RS1/10S224J
R	417		RS1/10S223J
R	418		RS1/10S223J
R	419		RS1/10S222J
R	420		RS1/10S222J
R	423		RS1/8S0R0J
R	431		RS1/8S471J
R	432		RS1/8S471J
R	435		RS1/10S223J
R	436		RS1/10S223J
R	439		RS1/10S472J
R	443		RD1/4PU222J
R	444		RD1/4PU222J
R	445		RS1/10S272J
R	446		RS1/10S272J
R	447		RS1/10S104J
R	448		RS1/10S104J
R	459		RS1/10S272J
R	460		RS1/10S272J
R	461		RS1/10S151J
R	462		RS1/10S151J
R	475		RD1/4PU471J
R	476		RD1/4PU471J
R	502		RS1/10S222J
R	503		RD1/4PU472J
R	504		RD1/4PU223J
R	506		RS1/10S0R0J
R	507		RS1/8S473J
R	508		RS1/10S102J
R	509		RS1/10S472J
R	511		RS1/10S222J
R	513		RS1/10S472J
R	514		RS1/10S473J
R	515		RD1/4PU681J
R	516		RD1/4PU681J
R	517		RS1/8S681J
R	518		RS1/10S681J
R	519		RS1/10S0R0J
R	520		RS1/10S0R0J
R	522		RS1/10S682J
R	524		RS1/10S561J
R	525		RD1/4PU272J
R	526		RS1/10S472J
R	527		RS1/10S682J
R	528		RS1/10S222J
R	529		RS1/10S472J
R	530		RS1/10S222J
R	531		RS1/10S103J
R	532		RS1/10S224J
R	533		RS1/8S473J
R	534		RD1/4PU102J
R	536		RS1/8S102J
R	542		RD1/4PU0R0J
R	543		RS1/10S0R0J
R	544		RS1/10S0R0J
R	545		RS1/8S0R0J
R	550		RS1/8S0R0J
R	570		RS1/10S103J
R	571		RS1/10S103J
R	579		RS1/10S331J
R	580		RS1/10S103J

ClibPDF - www.fastio.com

=====Circuit Symbol and No.		===Part Name	Part No.
R	581		RD1/4PU102J
R	582		RD1/4PU102J
R	583		RS1/10S562J
R	584		RD1/4PU102J
R	601		RN1/10SE2202D
R	602		RD1/4PU912J
R	603		RS1/10S104J
R	604		RS1/10S393J
R	605		RD1/4PU102J
R	606		RS1/10S124J
R	607		RS1/10S473J
R	621		RD1/4PU473J
R	626		RS1/10S0R0J
R	628		RS1/10S473J
R	638		RD1/4PU473J
R	639		RD1/4PU473J
R	641		RS1/10S202J
R	642		RD1/4PU102J
R	651		RD1/4PU472J
R	652		RD1/4PU472J
R	653		RS1/10S222J
R	654		RS1/10S222J
R	655		RD1/4PU222J
R	656		RD1/4PU472J
R	657		RD1/4PU222J
R	658		RS1/8S222J
R	659		RD1/4PU473J
R	661		RS1/10S1R0J
R	664		RS1/10S472J
R	665		RD1/4PU102J
R	668		RD1/4PU222J
R	681		RD1/4PU222J
R	682		RD1/4PU222J
R	683		RD1/4PU222J
R	688		RD1/4PU681J
R	691		RS1/10S102J
R	692		RS1/8S102J
R	693		RS1/10S102J
R	701		RS1/8S102J
R	702		RD1/4PU151J
R	703		RS1/10S103J
R	707		RD1/4PU102J
R	709		RS1/10S333J
R	710		RD1/4PU102J
R	711		RS1/10S102J
R	712		RS1/10S102J
R	713		RS1/10S102J
R	714		RS1/10S102J
R	715		RD1/4PU562J
R	716		RS1/10S104J
R	717		RS1/10S104J
R	718		RS1/10S102J
R	719		RS1/10S222J
R	720		RS1/10S222J
R	721		RS1/10S684J
R	722		RS1/10S681J
R	723		RS1/10S562J
R	951		RD1/4PU471J
R	958		RD1/4PU102J
R	961		RS1/10S472J
R	962		RD1/2PM561J
R	971		RS1/10S473J
R	972		RS1/10S103J
R	973		RS1/10S473J
R	974		RS1/10S473J
R	975		RS1/10S103J
R	976		RS1/10S473J
R	977		RS1/10S101J
R	978		RS1/10S472J
R	979		RS1/10S472J

=====Circuit Symbol and No.		===Part Name	Part No.
R	981		RS1/10S1R0J
R	983		RS1/10S472J
R	985		RD1/4PU102J
R	987		RS1/10S221J
R	991		RD1/4PU221J
R	992		RD1/4PU221J
R	993		RS1/10S472J
R	994		RS1/10S222J

CAPACITORS

C	411			CKSQYB471K50
C	412			CKSQYB223K50
C	431			CEJA100M16
C	432			CEJA100M16
C	441			CEJA1R0M50
C	442			CEJA1R0M50
C	443			CKSQYB223K50
C	444			CKSQYB223K50
C	445			CKSQYB102K50
C	446			CKSQYB102K50
C	447			CKSQYB102K50
C	451			CEJA2R2M50
C	452			CEJA2R2M50
C	453			CEJA4R7M35
C	454			CEJA4R7M35
C	455			CKSQYB104K50
C	456			CKSQYB104K50
C	457			CEJANP100M16
C	458			CEJANP100M16
C	459			CKSQYB822K50
C	460			CKSQYB822K50
C	461			CEJA1R0M50
C	462			CEJA1R0M50
C	469			CEAL2R2M50
C	470			CEJA2R2M50
C	471			CKSQYB333K50
C	472			CKSQYB333K50
C	473			CEJA220M6R3
C	474			CEJA2R2M50
C	477			CKSQYB104K50
C	481			CEJA470M10
C	482			CKSQYB104K50
C	483			CKSQYB183K50
C	484			CKSQYB183K50
C	485			CKSQYB102K50
C	486			CKSQYB102K50
C	501			CKSQYB103K50
C	504			CKSQYB473K50
C	506			CKSYB103K50
C	507			CKSQYB102K50
C	508			CKSQYB103K50
C	510			CEJA220M10
C	512			CEJA220M10
C	513			CKSQYB473K50
C	515			CKSQYB223K50
C	518		4.7µF/16V	CCH1250
C	519			CKSQYB103K50
C	522			CEJA220M10
C	523			CKSQYB104K50
C	524			CCSQCH150J50
C	525			CCSQCH150J50
C	527			CKSQYB103K50
C	529			CKSQYB103K50
C	530			CKSQYB103K50
C	531			CCSCH101J50
C	535			CKSQYB223K50
C	541			CKSQYB223K50
C	543			CKSQYB103K50
C	544			CKSQYB102K50
C	546			CCSQCH101J50

ClibPDF - www.fastio.com

=====Circuit Symbol and No.		===Part Name	Part No.
C	551		CEJAR22M50
C	552		CEJAR22M50
C	553		CEJAR22M50
C	554		CEJAR22M50
C	556	3300µF/16V	CCH1150
C	570		CEJA100M16
C	571		CEJA330M10
C	572		CEJA1R0M50
C	573		CKSYB104K50
C	574		CEJA1R0M50
C	591		CEJA220M10
C	604		CEJA4R7M35
C	606		CKSQYB473K50
C	607		CEJA2R2M50
C	608		CKSYB102K50
C	610		CCSQCH101J50
C	611		CCSQCH101J50
C	651		CKSQYB473K50
C	652		CEJA4R7M35
C	654		CCSQCH101J50
C	701		CKSYB105K16
C	703		CKSQYB103K50
C	704		CKSQYB222K50
C	705		CKSQYB104K50
C	706		CKSQYB472K50
C	707		CKSQYB104K50
C	709		CEJA4R7M35
C	710		CKSQYB223K50
C	711		CCSQCH220J50
C	712		CCSQCH220J50
C	713		CKSQYB104K50
C	714		CKSQYB104K50
C	715		CKSQYB223K50
C	716		CKSYB103K50
C	717		CKSQYB103K50
C	718		CKSQYB102K50
C	961		CKSYB473K50
C	962		CCSQCH101J50
C	971	470µF/16V	CCH-114
C	972		CKSQYB473K50
C	973		CEJA101M10
C	974		CKSQYB473K50
C	981		CEAS331M10
C	982		CKSQYB103K50
C	983		CEJA101M16
C	984		CKSYB473K50
C	991		CKSQYB473K50
C	992		CKSQYB102K50
C	993		CEAL101M10

C

Unit Number : CWM5571(DEH-345R/X1M/EW)
Unit Number : CWM5572(DEH-344R/X1M/EW)
(DEH-343R/X1M/GR)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1801	IC	PD6196A
D	1801	Diode	DA204K
D	1812	Diode	DA204K
X	1801	Ceramic Resonator 4.97MHz	CSS1422
IL	1801	Lamp 14V 40mA	CEL1547
		(Except for DEH-345R/X1M/EW)	CEL1479
IL	1802	Lamp 14V 40mA	CEL1547
		(Except for DEH-345R/X1M/EW)	CEL1479
IL	1803	Lamp 14V 40mA	CEL1547
		(Except for DEH-345R/X1M/EW)	CEL1479
IL	1804	Lamp 14V 40mA	CEL1547
		(Except for DEH-345R/X1M/EW)	CEL1479
IL	1805	Lamp 14V 40mA	CEL1547
		(Except for DEH-345R/X1M/EW)	CEL1479
LCD	1801	LCD	CAW1453

RESISTORS

R	1801	RS1/8S222J
R	1802	RS1/8S222J
R	1807	RS1/10S0R0J
R	1810	RS1/10S0R0J
R	1811	RS1/10S471J
R	1812	RS1/10S471J
R	1813	RS1/10S471J
R	1814	RS1/10S471J
R	1817	RS1/10S0R0J
R	1818	RS1/10S0R0J

CAPACITORS

C	1801	CKSQYB103K50

E

Unit Number :
Unit Name : Detector PCB

MISCELLANEOUS

Q	1	Photo-transistor	CPT-230S-X
Q	2	Photo-transistor	CPT-230S-X

Miscellaneous Parts List

		Pickup Unit(SERVICE)	CXX1230
M	1	Motor Unit(Spindle)	CXA9407
M	2	CRG Motor Unit(Carriage)	CXA9392
M	3	Load Motor Unit(Loading)	CXA9391

ClibPDF - www.fastio.com

6. ADJUSTMENT

6.1 TUNER ADJUSTMENT

● Connection Diagram

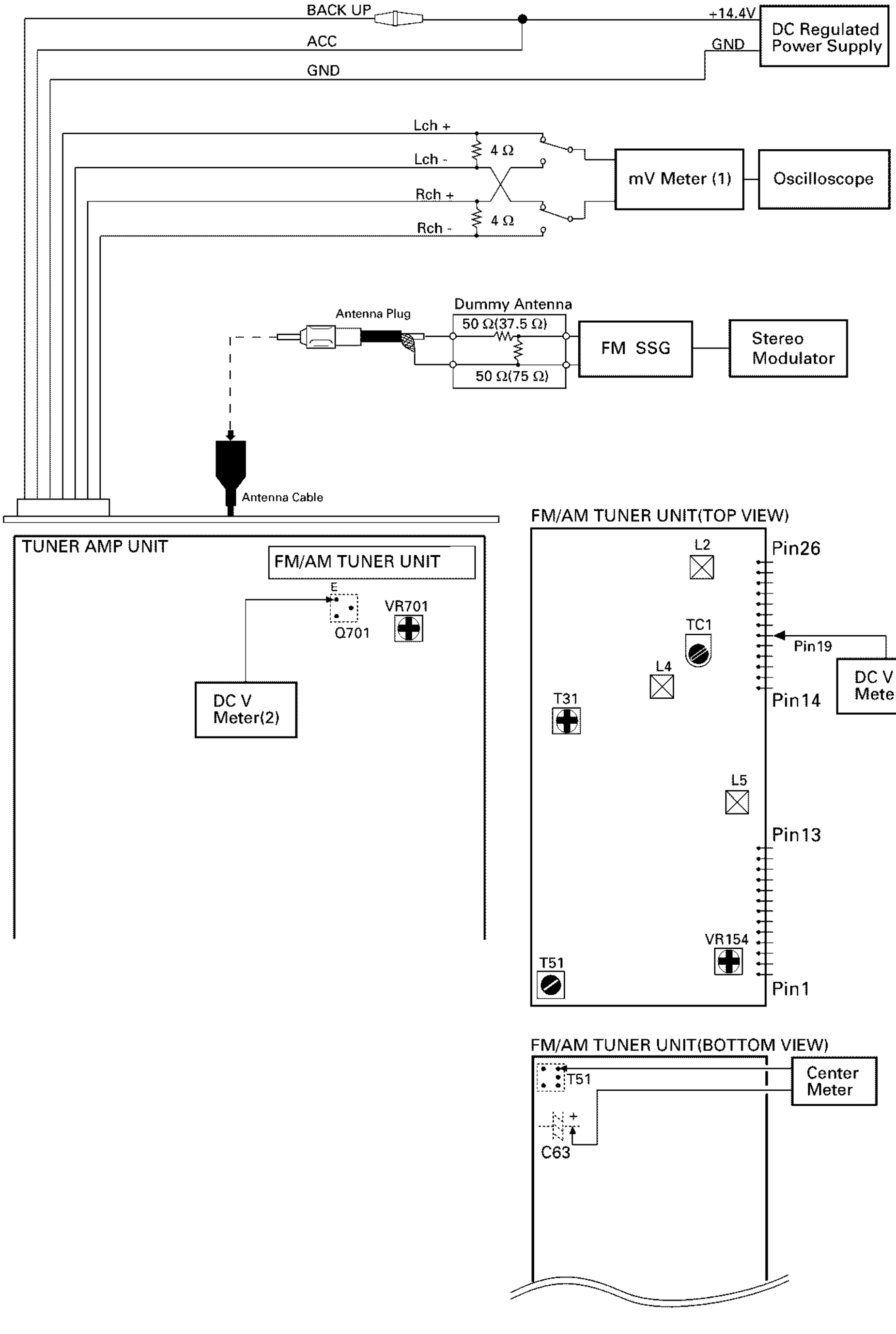


Fig. 23

ClibPDF - www.fastio.com

FM ADJUSTMENT(DEH-345R/X1M/EW, DEH-344R/X1M/EW, DEH-343R/X1M/GR)

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.)
S1:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)
S2:STEREO MOD., 1kHz, L or R=60%(40.50kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	1	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	1	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	1	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
Image	1	129.3 M	60—80	107.9	TC1	mV Meter(1) : Minimum
IFT	1	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	1	98.1 S1	39	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

RDS SL ADJUSTMENT(DEH-345R/X1M/EW, DEH-344R/X1M/EW, DEH-343R/X1M/GR)

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
	1	104.0 S2	35	104.0	VR701	DC V Meter(2) : 1.75V±0.05V

ClibPDF - www.fastio.com

6.2 CD SECTION

1)Precautions

· This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.
If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.
Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

· Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

· Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

· Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

· Test mode starting procedure
Switch ACC, back-up ON while pressing the **4** and **6** keys together.

· Test mode cancellation
Switch ACC, back-up OFF.

· Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
*During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.
*The unit will not load a disc.
When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

· When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

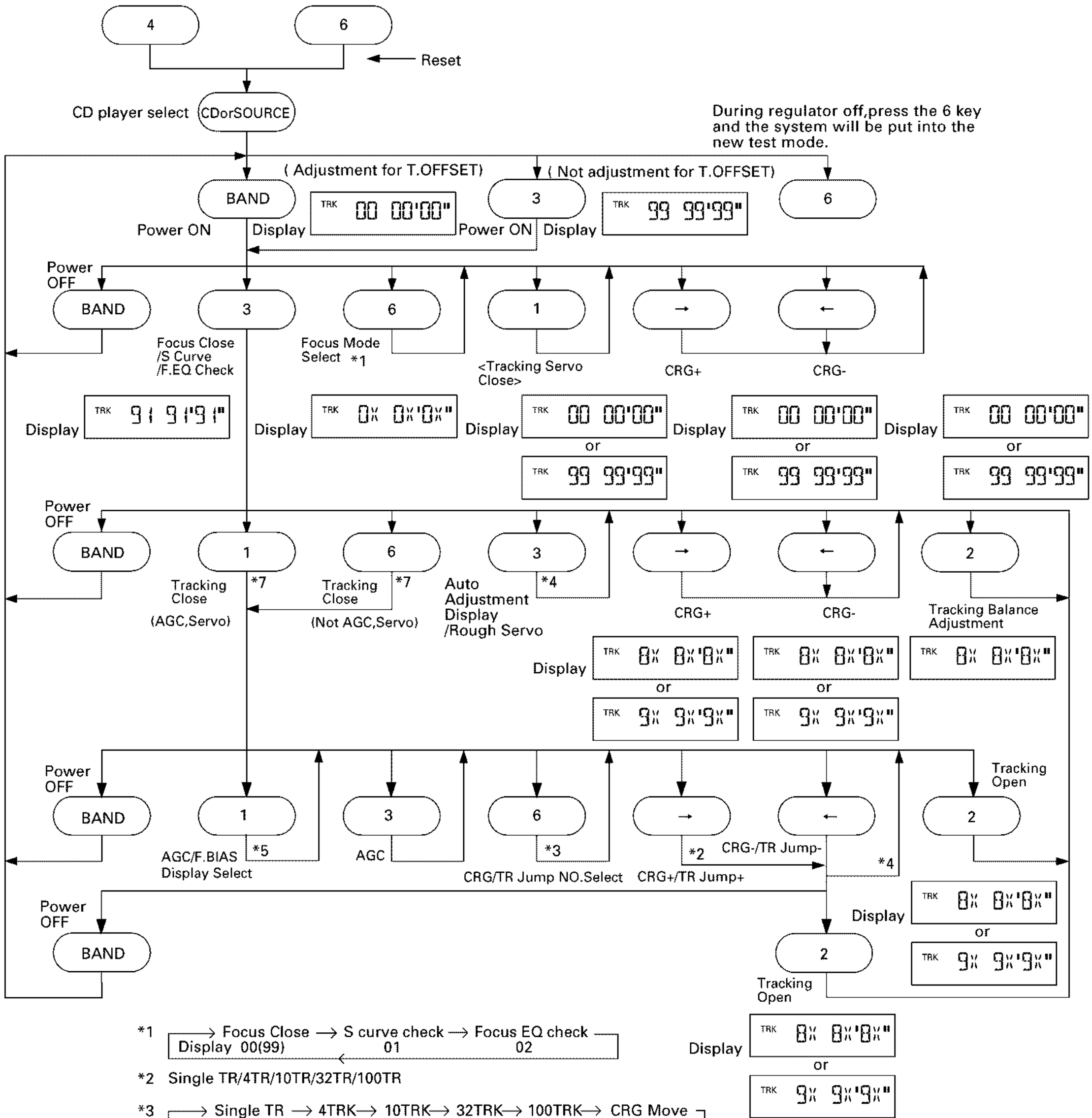
· Turn power off when pressing the button TR+ or the button TR- key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

· SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

· JUMP MODE resets to SINGLE as soon as power is switched OFF.

ClibPDF - www.fastio.com

● Flow Chart



ClibPDF - www.fastio.com

6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

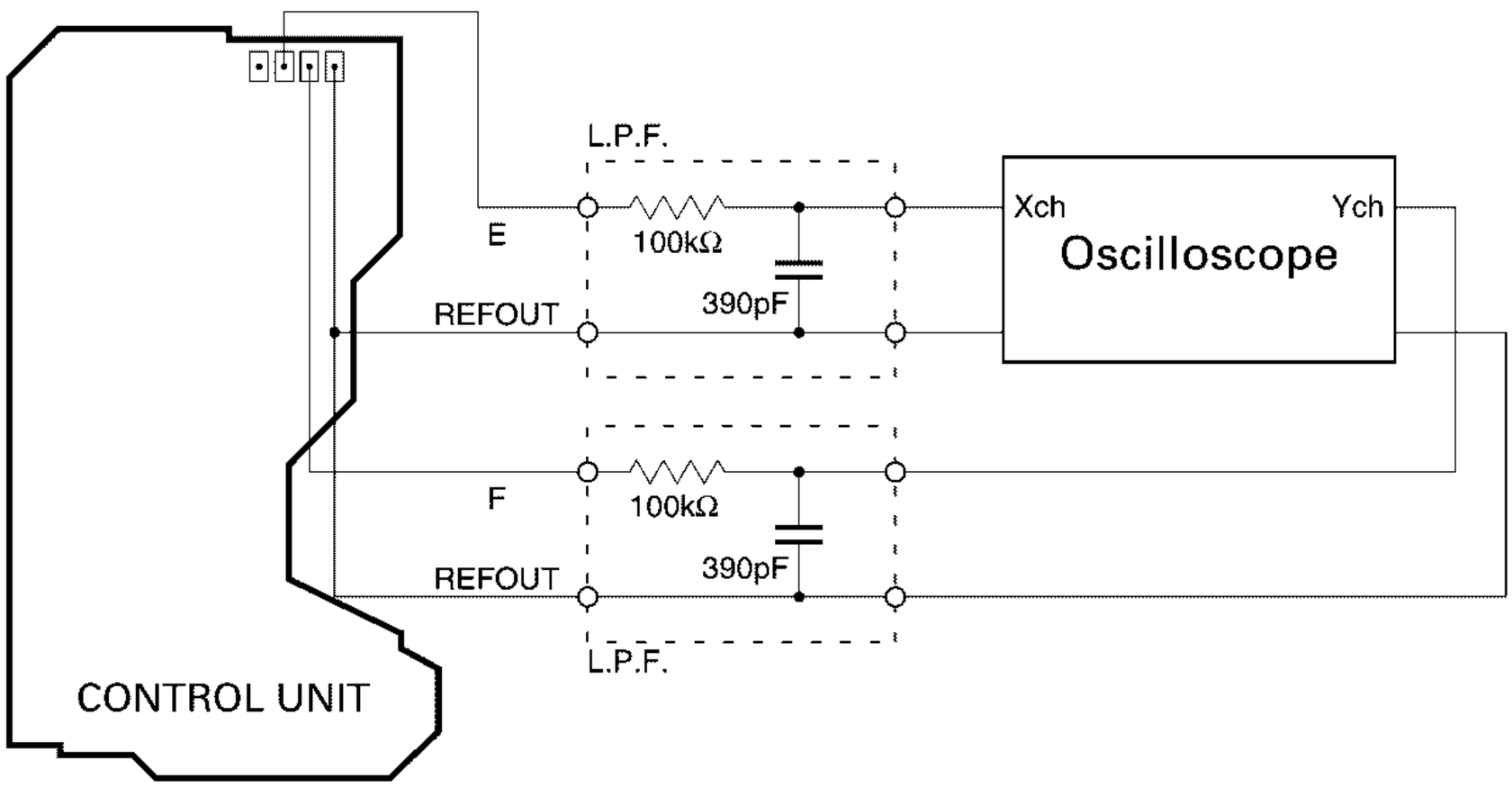
·**Note :**
Unlike previous CD mechanism modules the grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

·**Purpose :**
To check that the grating is within an acceptable range.

·**Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or track searching taking a long time, may appear.

·**Method :**

·Measuring Equipment	·Oscilloscope, Two L.P.F.
·Measuring Points	·E, F, REFOUT
·Disc	·ABEX TCD-784
·Mode	·TEST MODE



·**Checking Procedure**
1. In test mode, load the disc and switch the 5V regulator on.
2. Using the **TR+** and **TR-** buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3** 4 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

·**Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

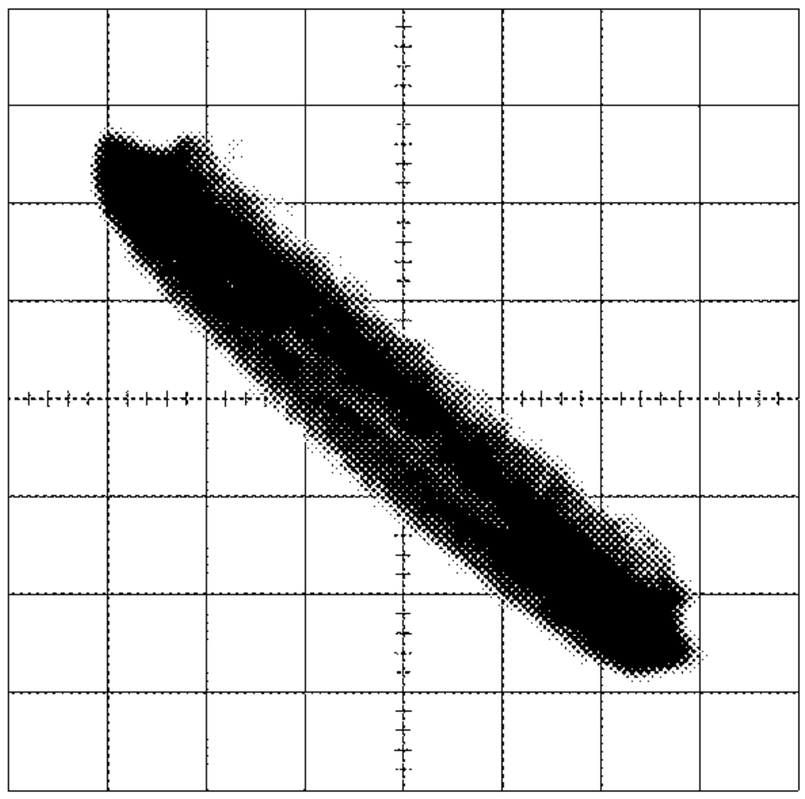
·**Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

ClibPDF - www.fastio.com

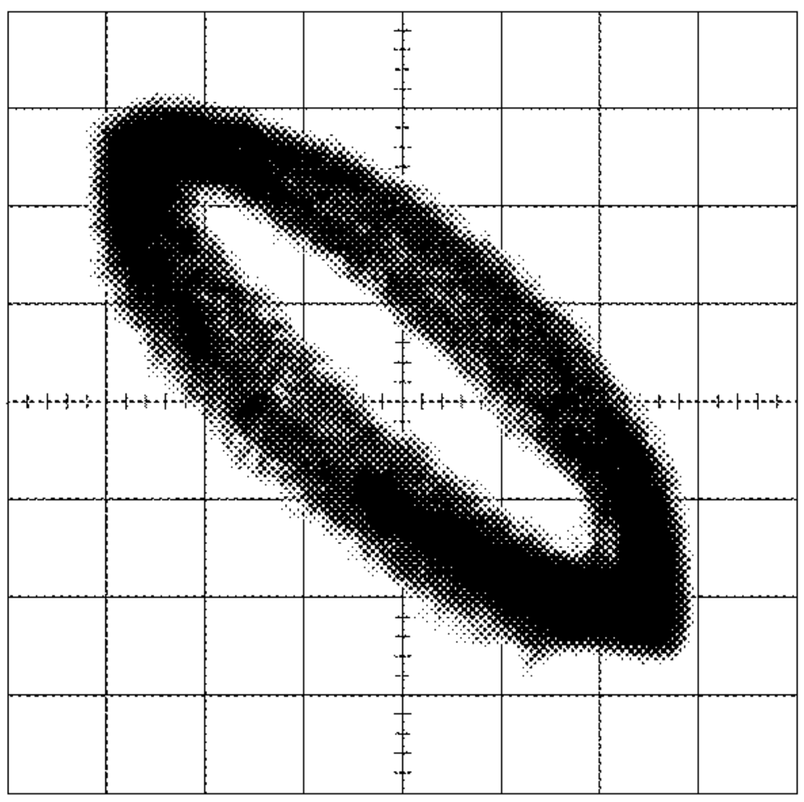
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

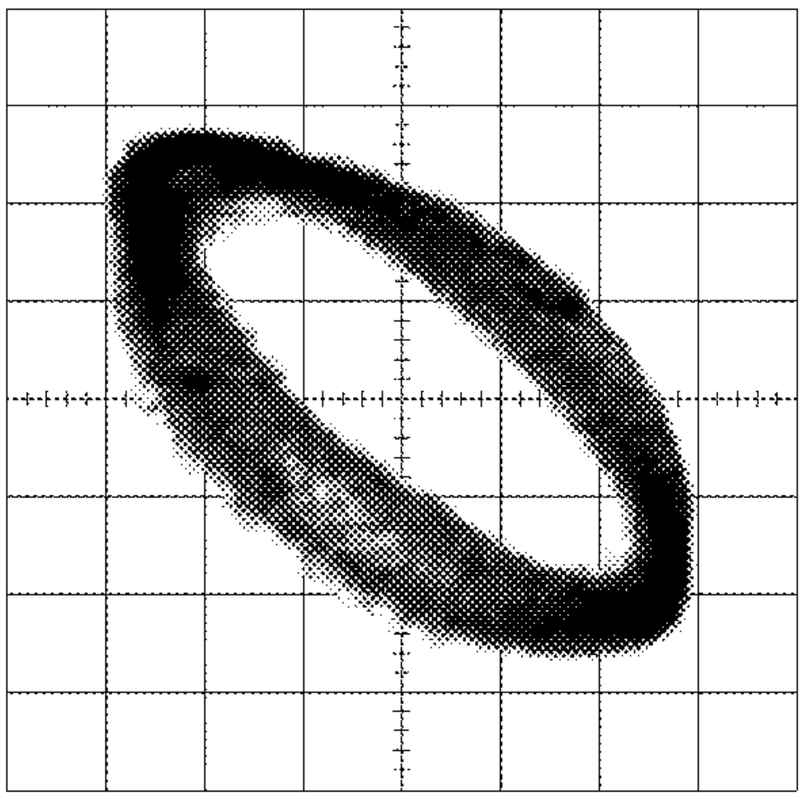
0°



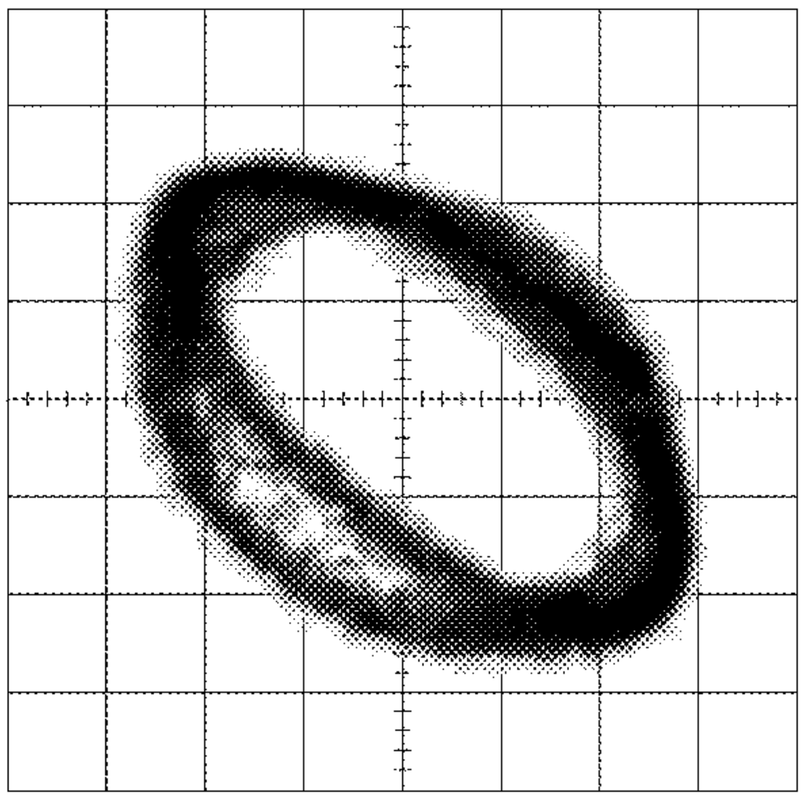
30°



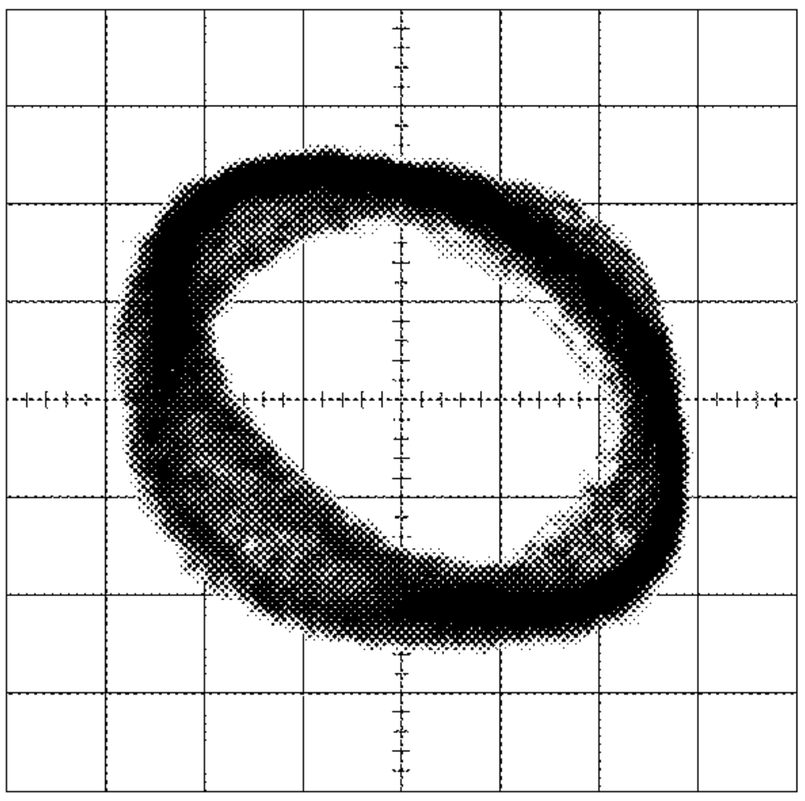
45°



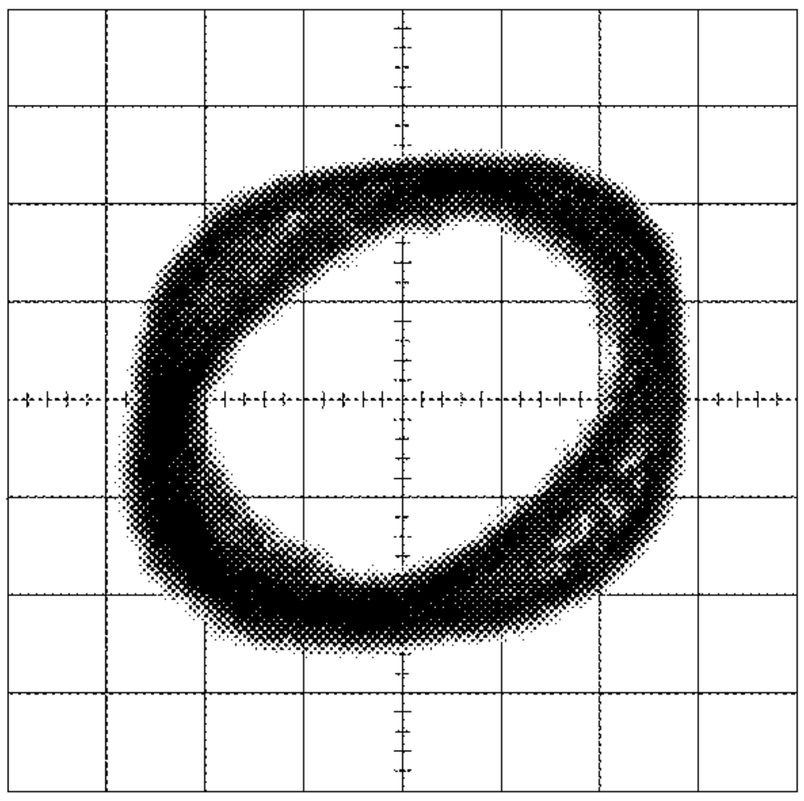
60°



75°



90°



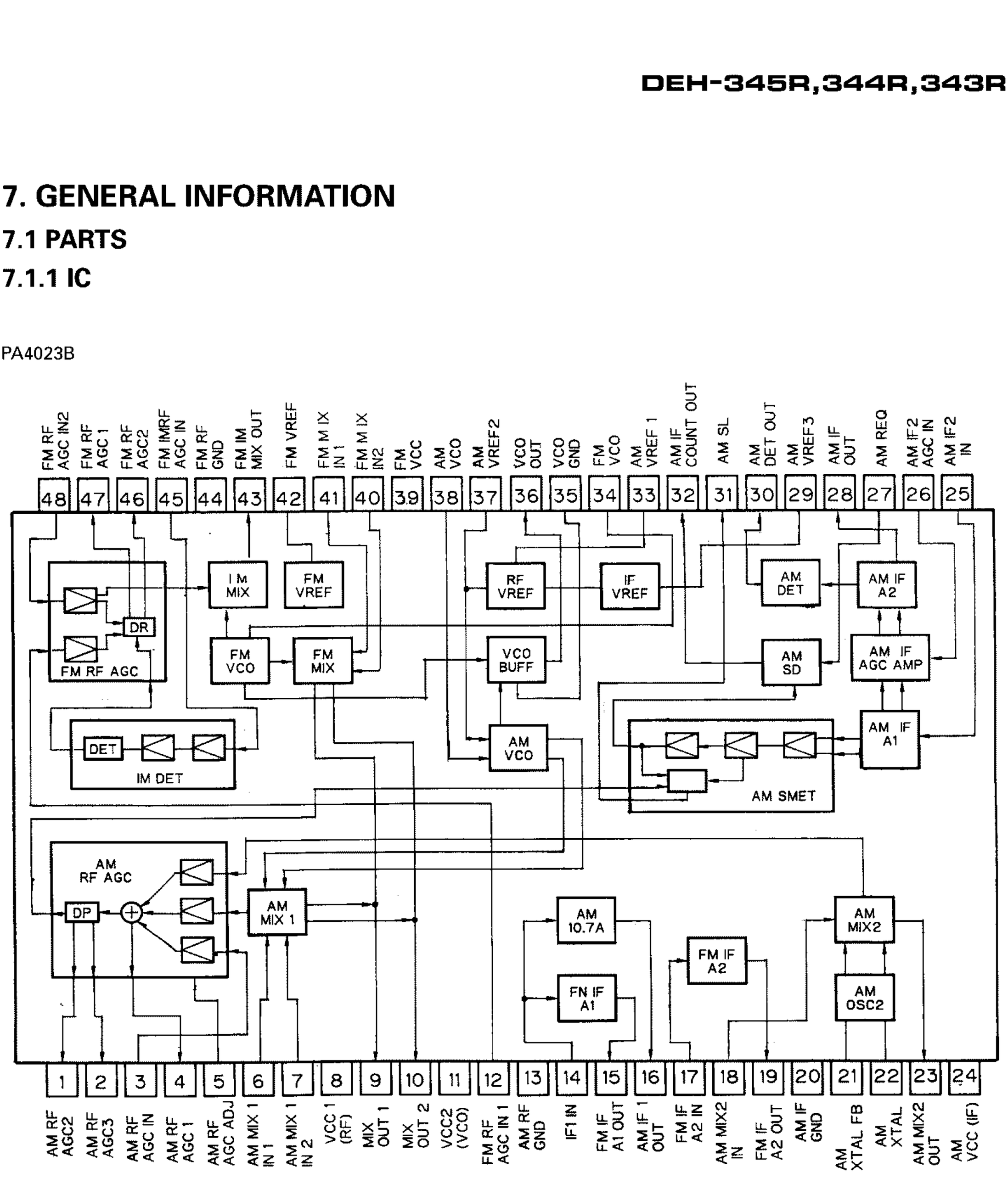
ClibPDF - www.fastio.com

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

PA4023B



ClibPDF - www.fastio.com

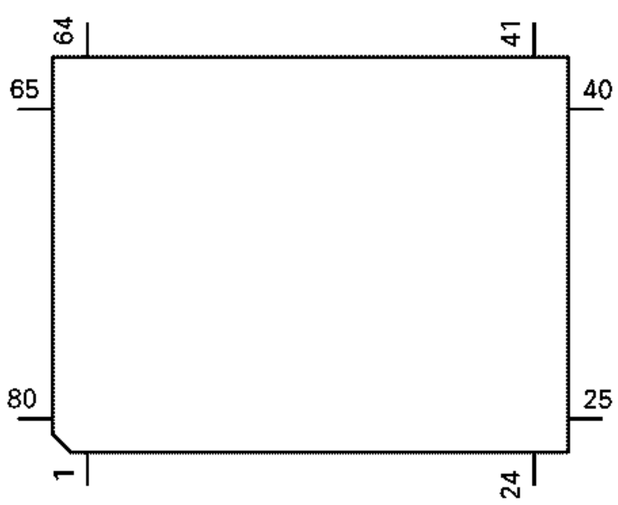
● Pin Functions (UPD63702AGF)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Supplies current of positive voltage to the logic circuits
2	$\overline{RST}$	I	System reset input pin
3	AO	I	Microcomputer interface AO="L": $\overline{STB}$ active and set to address register AO="H": $\overline{STB}$ active and set to parameter
4	$\overline{STB}$	I	Signal to latch serial data within the LSI
5	$\overline{SCK}$	I	Clock input pin to input and output serial data
6	SO	O	Outputs serial data and status signal
7	SI	I	Serial data input pin
8	D.GND		Logic circuit GND
9	X.GND		Crystal oscillation circuit GND
10	XTAL	I	Crystal oscillator connection pin
11	$\overline{XTAL}$	O	Crystal oscillator connection pin
12	X.VDD		Supplies current of positive voltage to the crystal oscillation circuit
13	DA.VDD		Supplies current of positive voltage to the D/A converter
14	R+	O	Right channel analog audio data output pin
15	R-	O	Right channel analog audio data output pin
16,17	DA.GND		D/A converter GND
18	L-	O	Left channel analog audio data output pin
19	L+	O	Left channel analog audio data output pin
20	DA.VDD		Supplies current of positive voltage to the D/A converter
21	D.VDD		Supplies current of positive voltage to logic circuit
22	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
23	WDCK	O	Pin to output double the frequency of LRCK
24	C16M	O	Pin to output the clock
25	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
26	DIN	I	Input pin for serial audio data
27	DOUT	O	Output pin for the serial audio data
28	SCKO	O	Output pin for the clock for the serial audio data
29	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT. Frequency is 44.1kHz at 50% duty at normal regeneration
30	TX	O	Output pin for the digital audio interface data
31	CTLV	I	Oscillation control pin for high-frequency clock generation VCO used for the digital PLL upon regeneration at fast speed of 2- or 4-fold
32	POUT	O	Output point for phase comparison
33	D.GND		GND for the logic circuit
34	VCO	I	Input pin for the inverter
35	$\overline{VCO}$	O	Output pin for the inverter
36	D.VDD		Supplies current of positive voltage to the logic circuit
37	PLCK	O	Pin for monitoring the bit clock
38	LOCK	O	Indicates "H" when the synchronized pattern detection signal matches the frame counter output at the EFM recovery modulation, and "L" when they don't match
39	WFCK	O	Minute-cycle signal for the bit clock, the signal indicates the cycle of 1 frame (approx. 7.35kHz)
40	RFCK	O	Minute-cycle signal for the clock, the signal indicates cycle of 1 frame (approx. 7.35kHz)
41	D.GND		GND for the logic circuit
42,43	TEST0,1	I	Test pins
44,45	TM2, TM4	I	Pins for controlling regeneration at fast speed of 2- or 4-fold
46-49	T4-T7	I	Test pins
50,51	C1D1, C1D2	O	Output pin for indicating the C1 error correction results
52-54	C2D1-C2D3	O	Output pin for indicating the C2 error correction results
55	D.VDD		Supplies current of positive voltage to the logic circuit
56	SFSY	O	Outputs 1 word of the subcode. Generally, 1 cycle is approx 136 micro seconds
57	SBSY	O	The signal indicates the beginning of the subcode block. The SFSY signal is output at high level every 98 times
58	SBSO	O	Output pin for the subcode data

ClibPDF - www.fastio.com

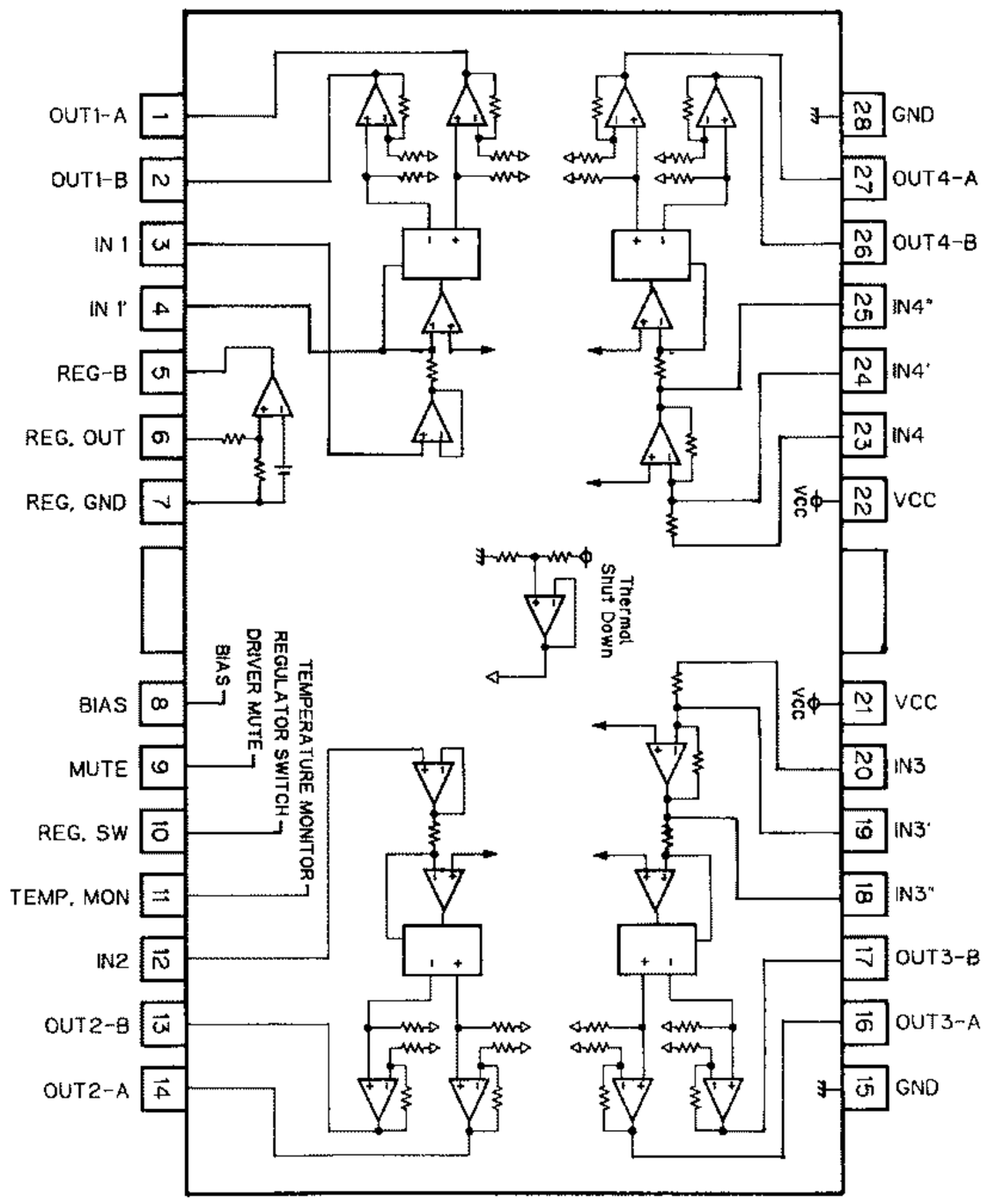
Pin No.	Pin Name	I/O	Function and Operation
59	SBCK	I	Input pin for the clock signal for read-out of the subcode data
60	A.GND		GND for the analog circuit
61	MD	O	Output pin for the spindle drive
62	SD	O	Output pin for the sled drive
63	TD	O	Output pin for the tracking drive
64	FD	O	Output pin for the focus drive
65	FBAL	O	Output pin for the focus balance control
66	TBAL	O	Output pin for the tracking balance control
67	A.VDD		Supplies current of positive voltage to the analog circuit
68	TBC	I	Switches coefficient banks for the tracking filter
69	EFM	I	Input pin for the EFM signal
70	HOLD	I	Input pin for the hold control signal
71	RFOK	I	Input pin for the RFOK signal
72	MIRR	I	Input pin for the MIRR signal
73	A.GND		GND for the analog circuit
74	HOME	I	Home position detector input
75	VR1	I	The signal input through these pins is digitized to 8-bit by the A/D converter, which by operation of the assigned register, can be read into the microcomputer
76	FE	I	Inputs a focus-error signal from the RF amplifier
77	TE	I	Inputs a tracking-error signal from the RF amplifier
78	TEC	I	Input pin for the tracking comparator
79	REFOUT	O	Output point for midpoint potential for the A/D converter for the LSI portion
80	A.VDD		Supplies current of accurate voltage to the analog circuit

*UPD63702AGF



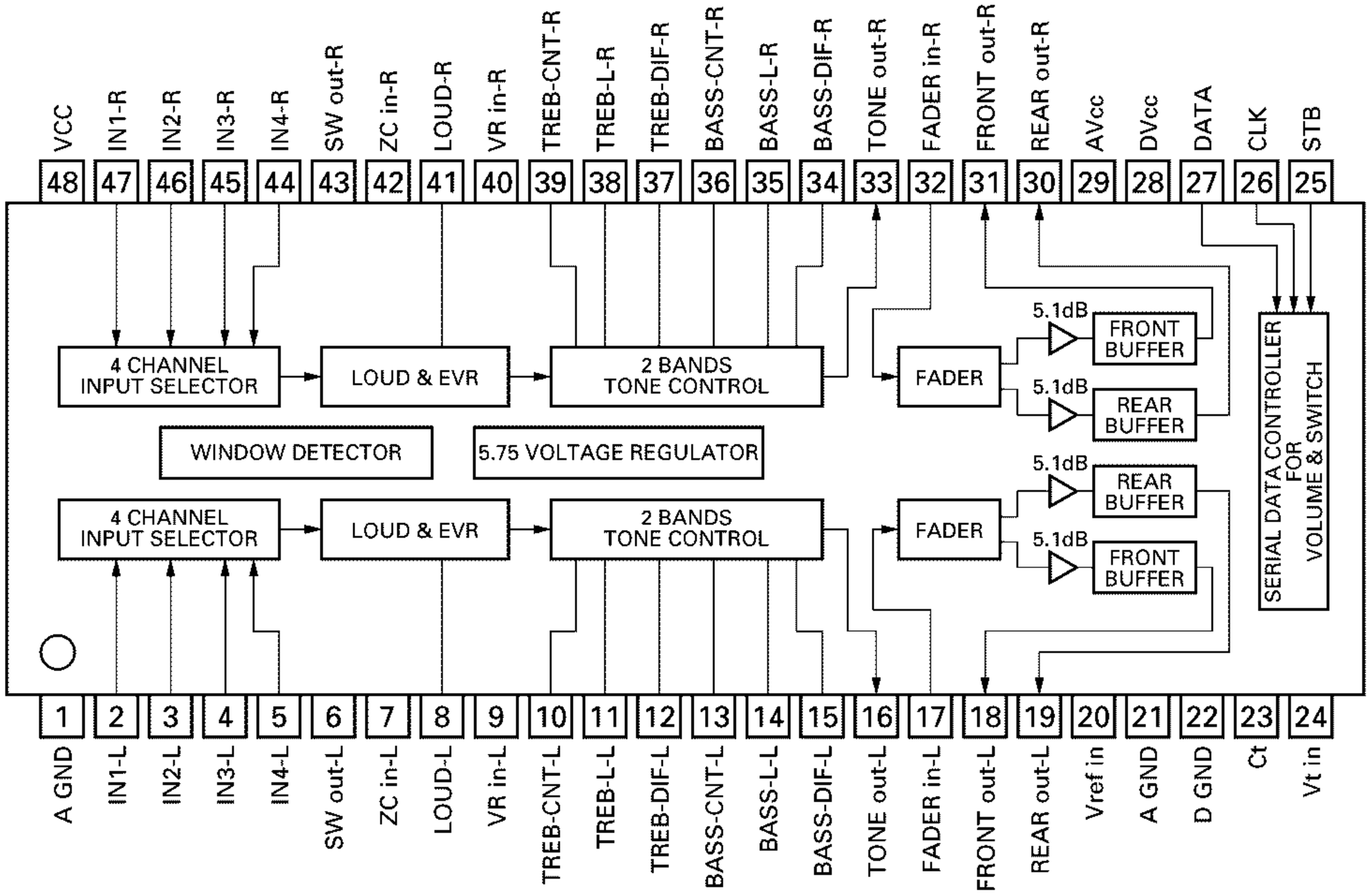
IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

BA6997FM

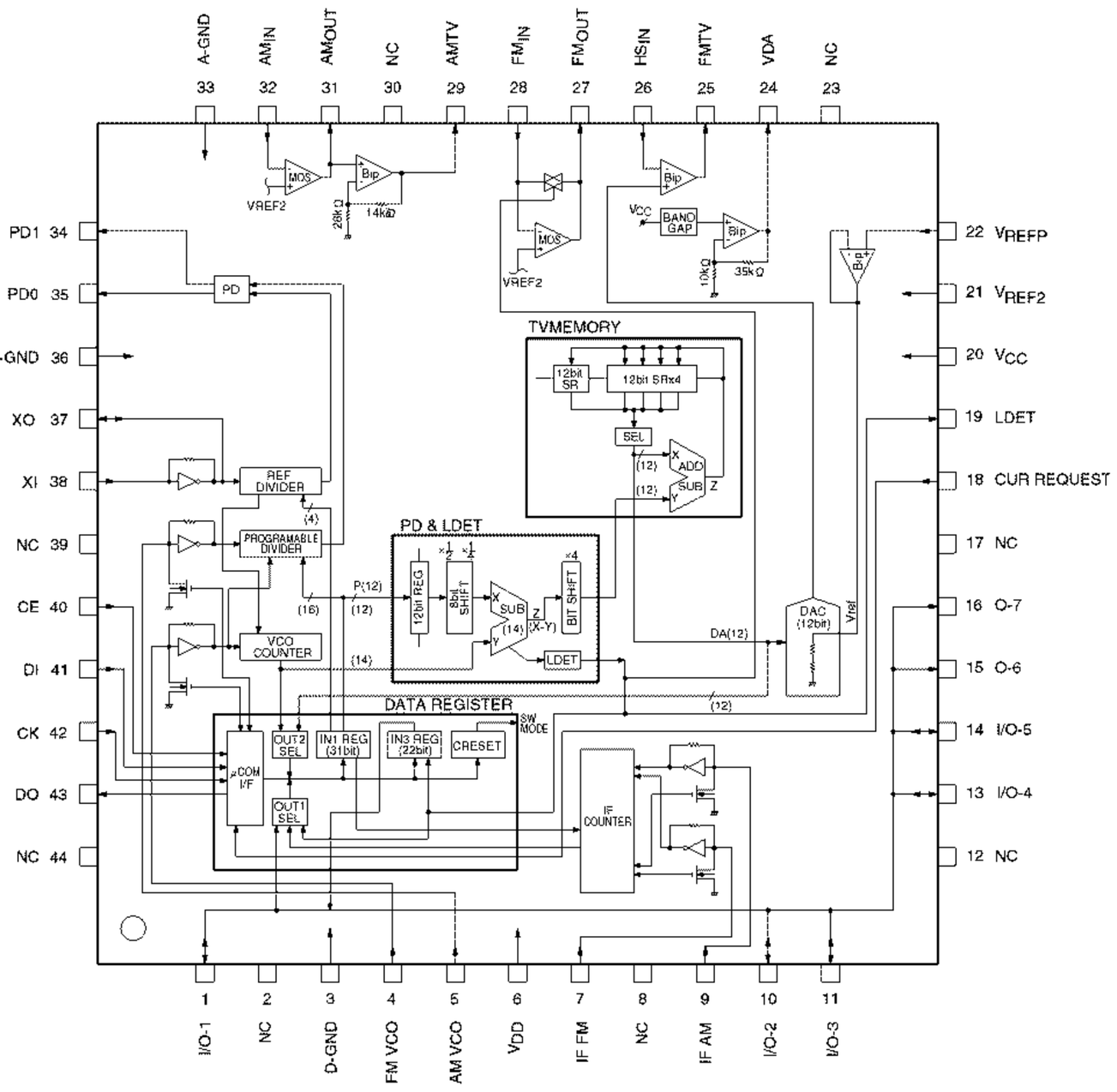


ClibPDF - www.fastio.com

SN761027DL

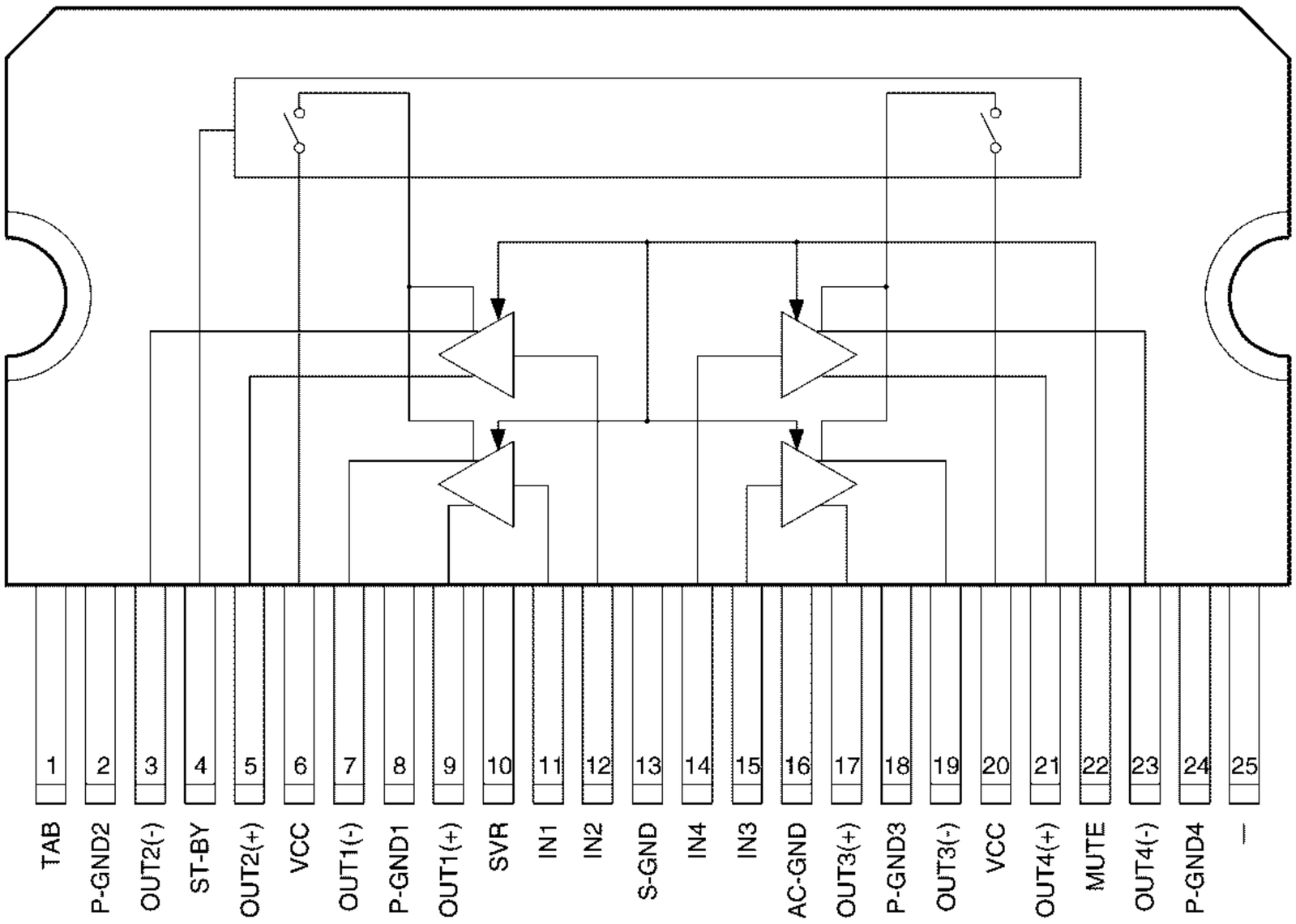


PM2007A



ClibPDF - www.fastio.com

TDA7384A



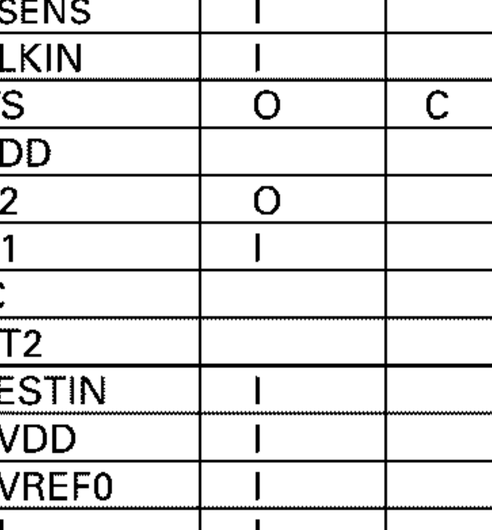
● Pin Functions (PD4888A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	MODEL1		C	Model select 1
2	SLIN		C	RDS signal level input
3	NL		C	RDS noise level input
4	AVSS			GND
5	ST	I		Stereo input
6	SD	I		SD input
7	AVREF1			Connect to VDD
8	KYDT	I		Key display micro-computer input
9	DPDT	O	C	Key display micro-computer output
10	MDSENS	I	C	Modulation detect input
11	PDI	I		Data input from PLL IC
12	PDO	O	C	Data output for PLL IC
13	$\overline{\text{PCK}}$	O	C	Clock output for PLL IC
14	PCE	O	C	Chip enable output for PLL IC
15	$\overline{\text{CURRQ}}$	O	C	Tuner voltage FIX output
16	XSI	I		Data input from CD mechanism module LSI
17	XSO	O	C	Data output for CD mechanism module LSI
18	$\overline{\text{XSCK}}$	O	C	Clock output for CD mechanism module LSI
19	$\overline{\text{DRST}}$	O	C	RDS decoder reset output
20	AM	O	C	AM power control output
21	FM	O	C	FM power control output
22	VDCONT	O	C	VD control output
23	CONT	O	C	Servo driver power supply control
24	XAO	O	C	Command/Data output for CD mechanism module LSI
25	$\overline{\text{XRST}}$	O	C	Reset output for CD mechanism module LSI
26	$\overline{\text{XSTB}}$	O	C	Strobe output for CD mechanism module LSI
27	$\overline{\text{CLAMP}}$	I		Disc clamp sense input
28	MIRR	I		Mirror detector input
29	FOK	I		Focus OK signal input
30	LOCK	I		Spindle lock detector input

ClibPDF - www.fastio.com

Pin No.	Pin Name	I/O	Format	Function and Operation
31	CDLOAD	O	C	Load motor loading control output
32	NC			Not used
33	VSS			GND
34	CDEJET	O	C	Load motor eject control output
35	CD5VON	O	C	CD +5V power supply control output
36	$\overline{\text{DLED}}$	O	N	Alarm LED output
37,38	MODEL2,3	I	N	Model select 2,3 input
39	NC			Not used
40	MUTCNT	I	C	Mute control input for RDS service
41	$\overline{\text{SWVDD}}$	O	C	Grille power supply control output
42	SYSPW	O	C	System power supply control output
43	ILMPW	O	C	Illumination power supply control output
44	MUTE	O	C	System mute output
45	PEE	O	C	Beep tone output
46	DOORH	O	C	Door system select output
47	RDS57K	I	C	57kHz input
48	$\overline{\text{SK}}$	I	C	SK input
49	VST	O	C	Strobe pulse output for electronic volume
50	VCK	O	C	Clock output for electronic volume
51	VDT	O	C	Data output for electronic volume
52	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
53	RECIVE	O	C	RDS decoder receiving output
54	ERROR	O	C	RDS noncorrectable output
55	DRELAY	O	C	External relay output
56	DRSENS	I	C	Door open/close sense input
57	LPFSW	O	C	Output for FIE
58	$\overline{\text{RDSLK}}$	I	C	RDSLK input
59	RDT	I	C	RDS recovery modulation data input
60	RESET	I		Reset input
61	$\overline{\text{LDET}}$	I		PLL lock sense input
62	$\overline{\text{RCK}}$	I	C	RDS clock input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{BSENS}}$	I		Back up power sense input
65	$\overline{\text{DSENS}}$	I		Grille detach sense
66	CLKIN	I		Clock input
67	$\overline{\text{L}}$/S	O	C	RDS fuzz'y control output
68	VDD			Power supply
69	X2	O		Crystal oscillator connection pin
70	X1	I		Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Sub clock pin
73	TESTIN	I		Test program mode input
74	AVDD	I		A/D converter analog power supply
75	AVREF0	I		A/D converter reference voltage
76	SL	I		SD level input
77	TEMP	I		Temperature detect input
78	VDSENS	I		VD power supply short detection input
79	DSCSNC	I		Disc sense input
80	EJTSNC	I		Disc eject position sense input

*PD4888A



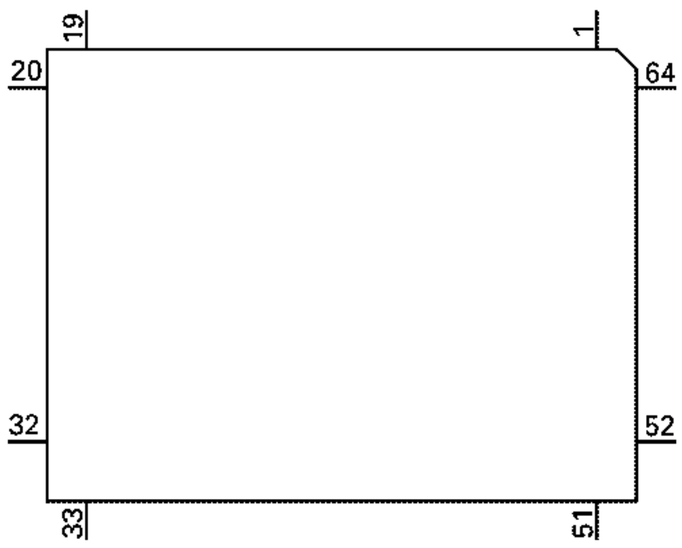
Format	Meaning
C	C MOS
N	N channel open drain

ClibPDF - www.fastio.com

● Pin Functions (PD6196A)

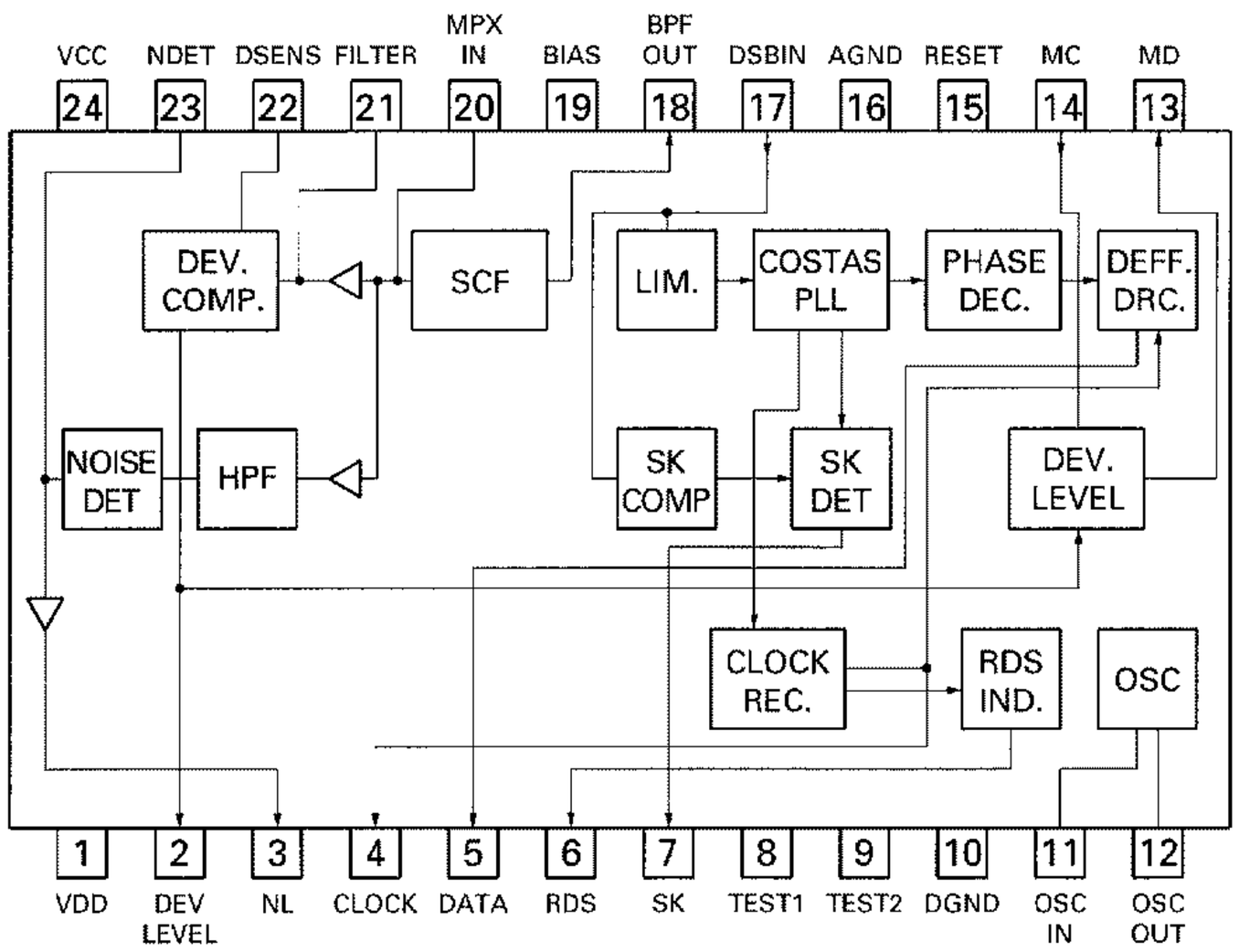
Pin No.	Pin Name	I/O	Format	Function and Operation
1-5	SEG4-0	O		LCD segment output
6-9	COM3-0	O		LCD common output
10	VLCD			LCD driver power supply
11-14	KST3-0	O	N	Key strobe output
15,16	KDT0,1	I		Key data input
17	REM	I		Remote control reception
18	DPDT	I		UART input
19	RST	I		System reset input
20	KYDT	O	C	UART output
21	MODA	I		Direct connect to VSS terminal
22,23	XO,XI			Crystal oscillator connection pin
24	VSS			GND
25,26	KDT2,3	I		Key data input
27,28	KST5,4	O	N	Key strobe output
29-55	SEG39-13	O		LCD segment output
56	VDD	O		Power supply terminal
57-64	SEG12-5	O		LCD segment output

*PD6196A



Format	Meaning
C	C MOS
N	N channel open drain

*PM4006B



ClibPDF - www.fastio.com

7.1.2 DISPLAY

● **CAW1453**

Fig. 24

ClibPDF - www.fastio.com

7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

1. Removing the Case (Fig.25)
2. Removing the Detach Grille Assy(Fig.26)
3. Removing the Panel Assy(Fig.26)

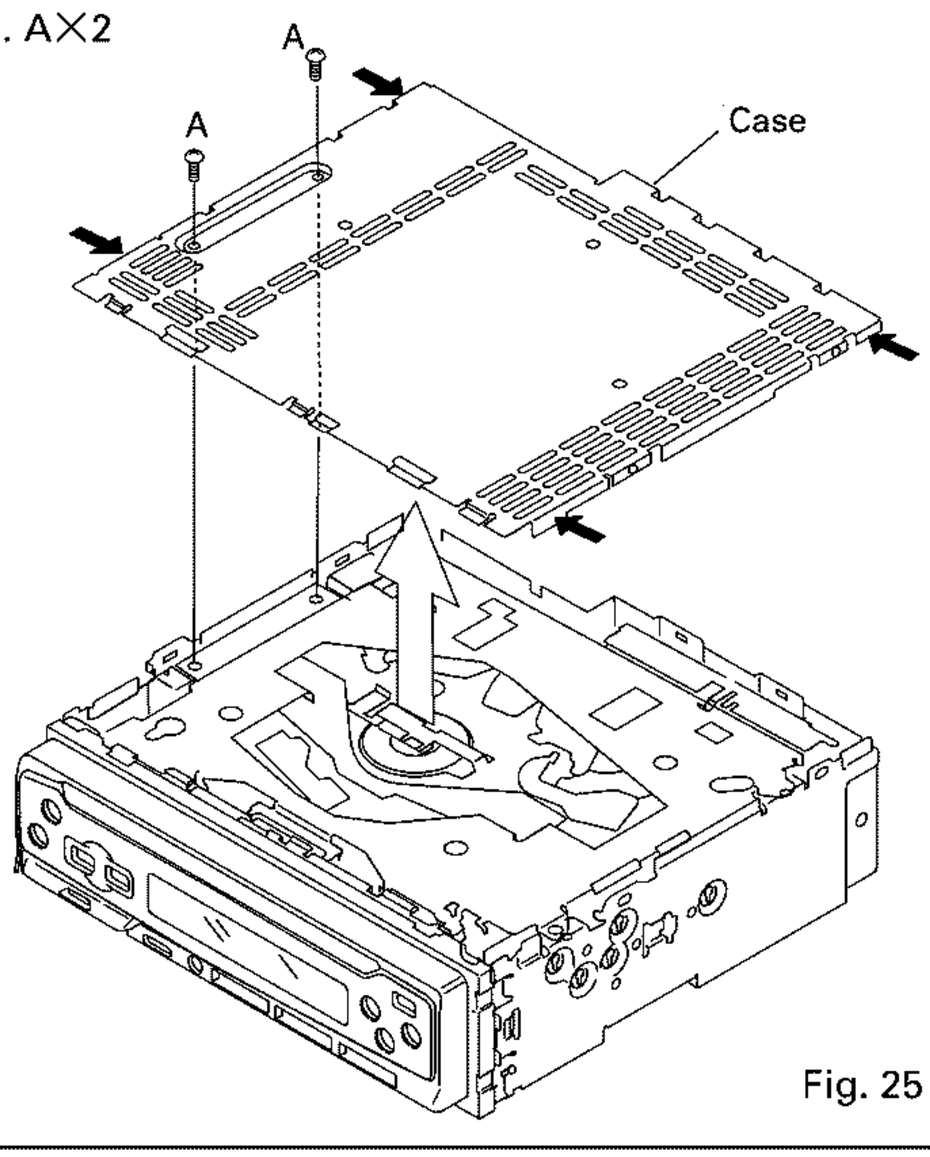


Fig. 25

4. Removing the CD Mechanism Module

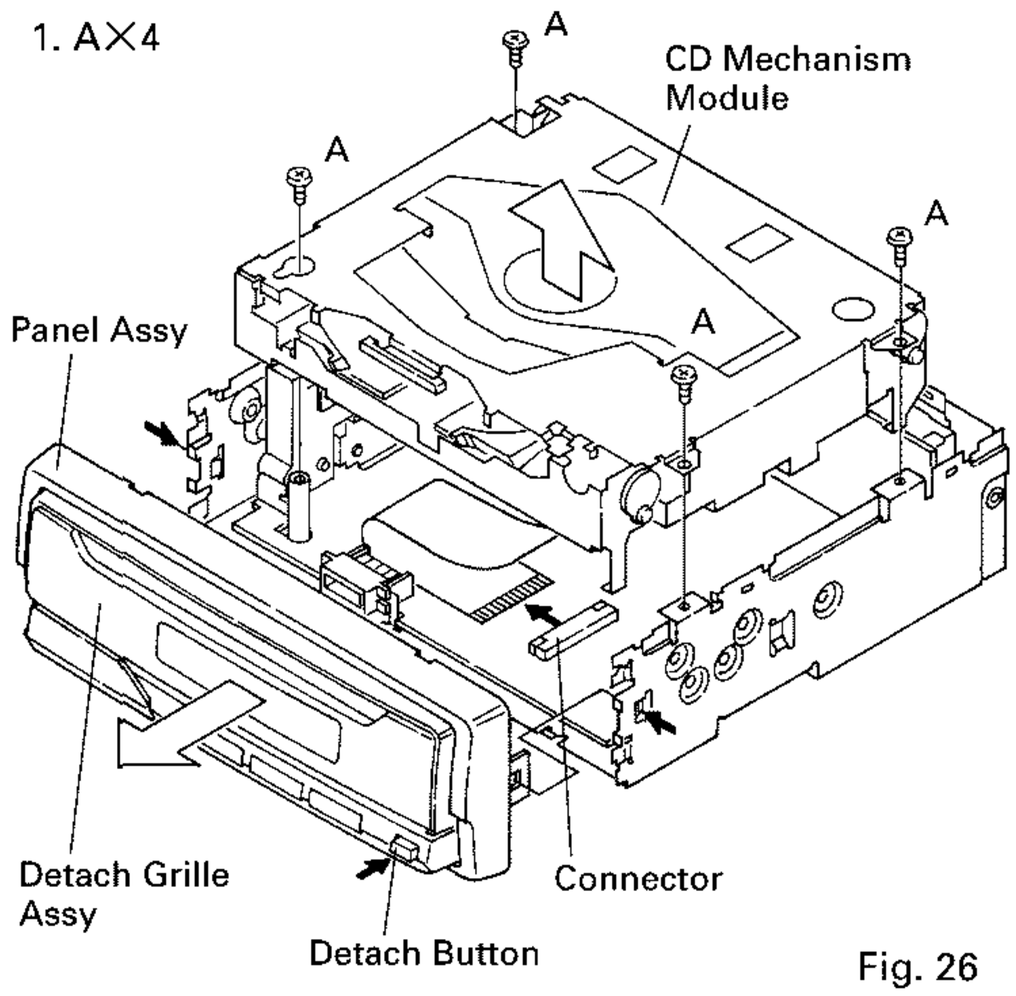


Fig. 26

5. Removing the Chassis Unit

1. A×1
2. B×1
3. C×1
4. D×2

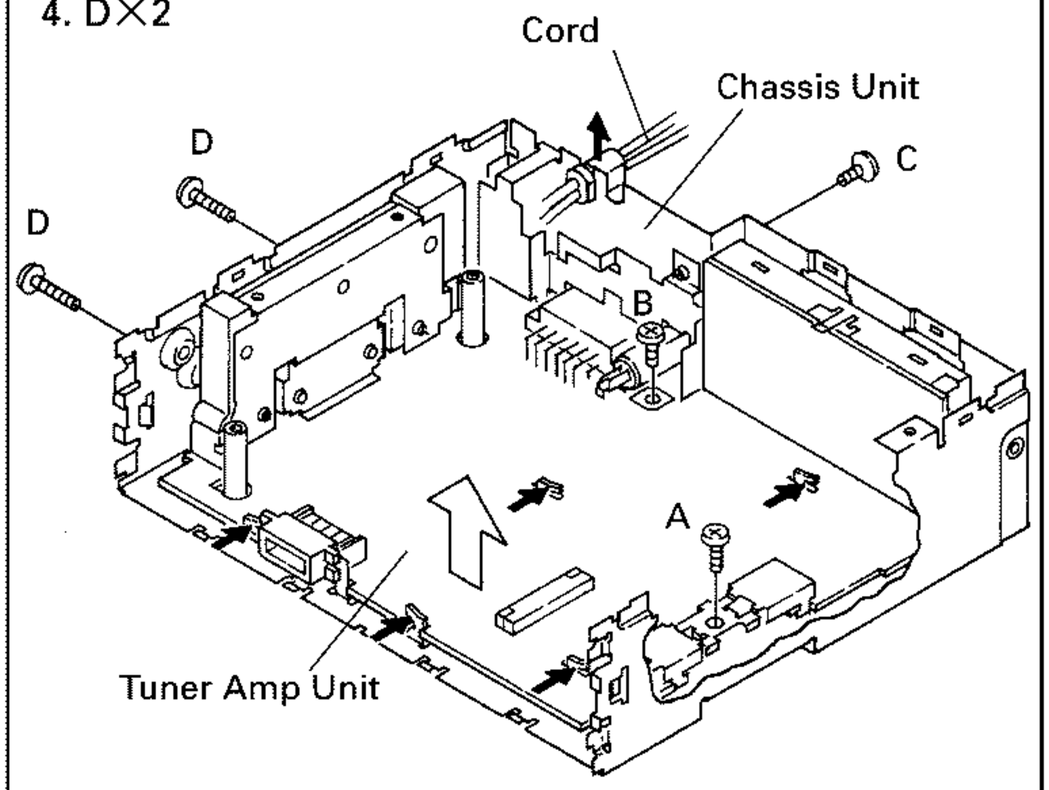


Fig. 27

ClibPDF - www.fastio.com

7.2.2 TEST MODE

● Error Number Indication

The system enters error mode to display the cause of error with a number when the system cannot operate CD or stops operation because of an error. The purpose of this measure is to reduce frequency of calls from users asking help for problems that are caused by incorrect operation by user, as well as to assist analysis and repair in servicing.

(1) Basic means of display

・An error code will be written on DMIN (minute area for display) and DSEC (second area for display) when CSMOD (CD mode area for system) is SERBORM.
The same data will be written on DMIN and DSEC.
DTNO shall be blank as before.

・Display examples of the head unit
Error codes will be displayed as shown below, depending on the capability of LCD. An error number will be displayed in the place of "xx."

・8-digit display ERROR-XX
・6-digit display ERR-XX or Err-XX
・4-digit display E-XX

With OEM products, display of error codes shall be according to the specificatins of the manufacturer.

(2) Error codes

Error code	Classification	Description	Cause / Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
19	ELECTRIC	Improper T.BAL adjustment	Value of T.BAL adjustment is out of parameter.
30	ELECTRIC	Search time out	Failed to reach target address →Carriage / tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal

(4) Number of error codes

One hundred error codes (00 to 99) will be available.

(5) Remarks

・Error codes are not displayed for the mechanism alone (because CD is OFF when an mechanical error is generated).
・When the system cannot read TOC, it is not deemed as an error, and the system continues operation to a certain extent.
・Be sure to take measures as shown in the display examples whenever designing a new head unit.
・The first digit of an error code has a meaning as follows:
1X : Error related to setup
3X : Error related to the search function
AX : Other errors

ClibPDF - www.fastio.com

● New Test Mode

When S-CD is specified as the source, basically the system plays as normal operation. After setup, the system displays the cause and time (absolute time) of an error if focus search is improper, spindle lock is removed, subcode cannot be read, or sound is skipped. During setup, the system displays the operation status of CD control software (internal RAM : CPOINT). The purpose of these displays and functions are to detect aging of servicing, as well as to improve efficiency of defect analysis.

(1) How to enter NEW TEST Mode

1. Reset the system by pressing keys (depending on the product) to enter the conventional Test mode.
2. Select S-CD as the source by pressing the source or CD key, then inserting a disc. Confirm that the regulator is OFF. Press the Switch Jump Mode key.
3. After that, the system will stay in the new Test mode, regardless of whether S-CD is OFF or ON.

To exit from the new Test mode, reset the system.

See the test mode flow chart Page 58.

(2) Relations of keys

keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Protection
BAND	To Regulator ON	To Regulator OFF	—	Time / Err No.select
→	—	FWD-Kick	FF / TR+	—
←	—	REV-Kick	REV / TR-	—
1	—	Tracking Close	Scan	—
2	—	Tracking Open	RPT	—
3	—	Focus Close	RDM	—
—	—	Focus Open	—	—
—	—	Jump Off	—	—
6	To New Test Mode	Jump Mode select	Auto / Manu	T.No. / Time select

Operations, such as EJECT, CD ON/OFF are performed normal mode.

(3) Error Cause, Error Code

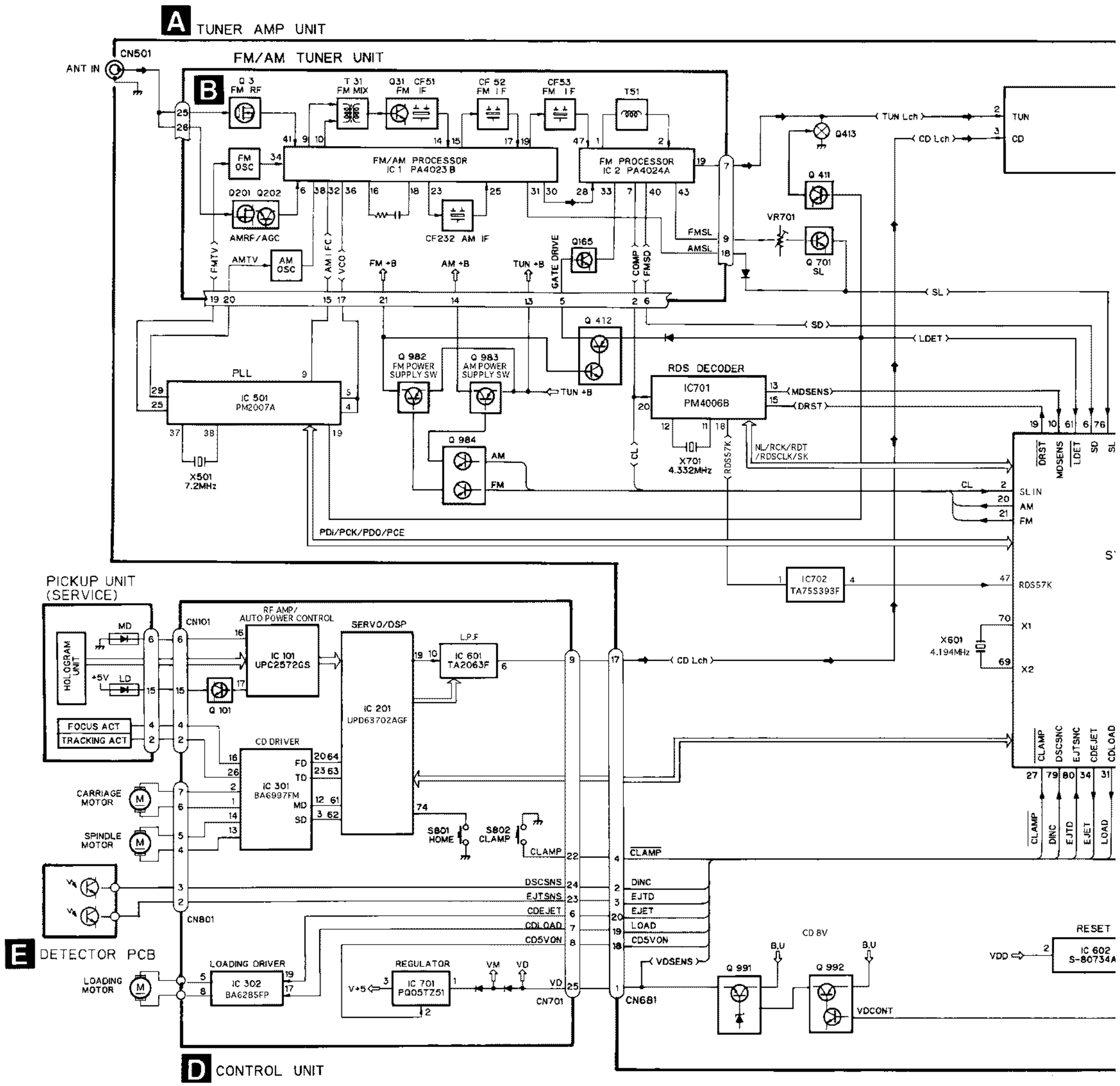
Code	Classification	Description	Cause / Details
40	ELECTRIC	Put out of focus	FOK=Low has continued for 100 msec →Damaged or soiled disc. vibration, or detective servo
41	ELECTRIC	Spindle unlock	LOCK=has continued for 100 msec →Damaged or soiled disc. vibration, or detective servo
42	ELECTRIC	Failed to read subcode	The system could not read subcode for 100 msec →Damaged or soiled disc. vibration, or detective servo
43	ELECTRIC	Sound skipped	The last-address-memory function activated →Damaged or soiled disc. vibration, or detective servo

There will be no mechanical error during aging. Error codes should be displayed in the same manner as in Normal mode.

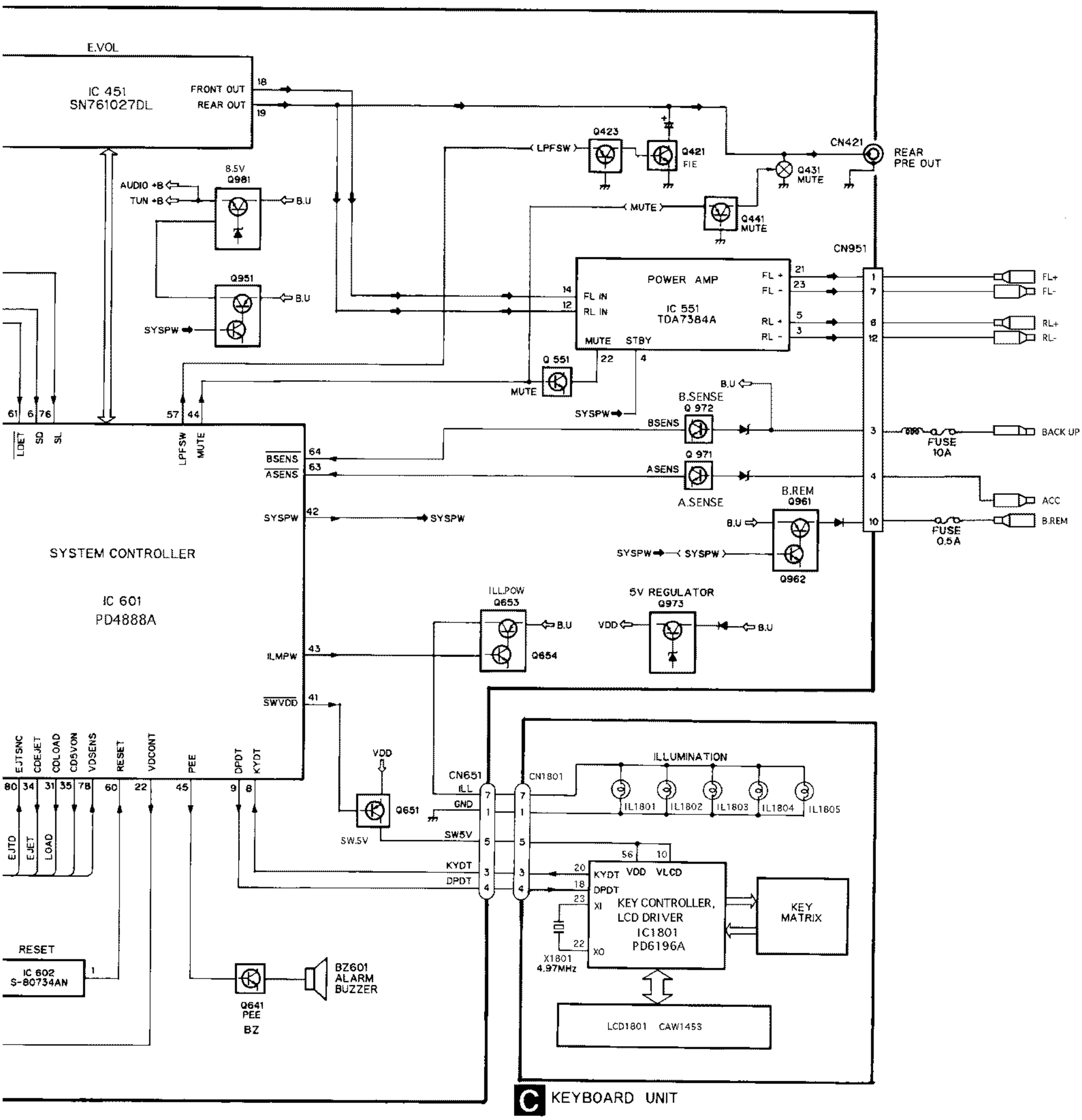
ClibPDF - www.fastio.com

7.3 BLOCK DIAGRAM

● DEH-345R/X1M/EW



ClibPDF - www.fastio.com



C KEYBOARD UNIT

Fig. 28

ClibPDF - www.fastio.com

8. OPERATIONS AND SPECIFICATIONS

● Connection Diagram

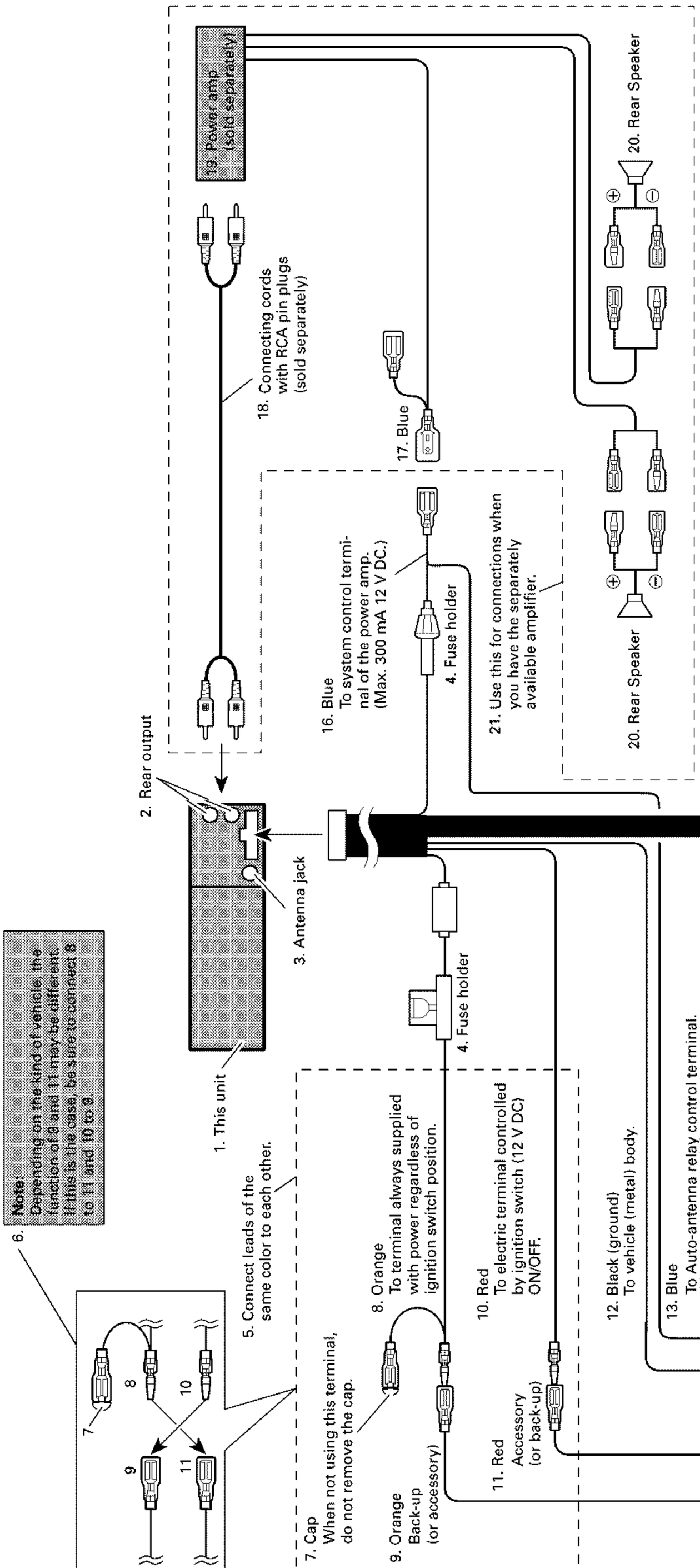
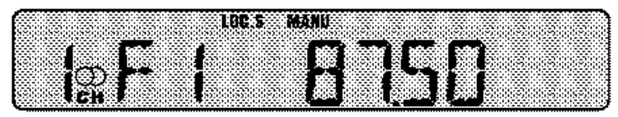

19. Power amp (sold separately)
20. Rear Speaker
18. Connecting cords with RCA pin plugs (sold separately)
17. Blue
16. Blue
To system control terminal of the power amp. (Max. 300 mA 12 V DC.)
4. Fuse holder
21. Use this for connections when you have the separately available amplifier.
20. Rear Speaker
2. Rear output
3. Antenna jack
1. This unit
4. Fuse holder
6. Note: Depending on the kind of vehicle, the function of 9 and 11 may be different. If this is the case, be sure to connect 8 to 11 and 10 to 9.
5. Connect leads of the same color to each other.
8. Orange
To terminal always supplied with power regardless of ignition switch position.
10. Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
12. Black (ground)
To vehicle (metal) body.
13. Blue
To Auto-antenna relay control terminal. (Max. 300 mA 12 V DC.)
15. Speaker leads
Green : Front left ⊕
Green/black : Front left ⊖
Gray : Front right ⊕
Gray/black : Front right ⊖
Green/red : Rear left ⊕
Black/green : Rear left ⊖
Gray/red : Rear right ⊕
Black/gray : Rear right ⊖
7. Cap
When not using this terminal, do not remove the cap.
9. Orange
Back-up
(or accessory)
11. Red
Accessory
(or back-up)
14. ISO connector
Note:
In some vehicles, the ISO connector may be divided into two. if this is the case, be sure to connect to both connectors.

Fig. 29

ClibPDF - www.fastio.com

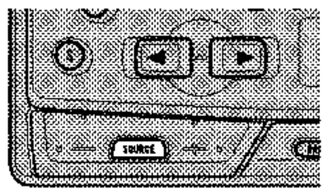
ClibPDF - www.fastio.com

Tuner Operation

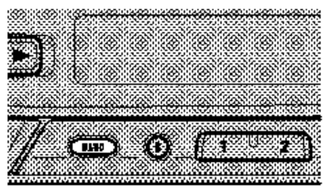


Tuner Source and Band

- **Push the SOURCE button to select Tuner.**
  The program service name or frequency appears on the display.
  ("◯" indicator lights when stereo station selected.)



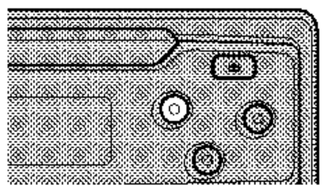
- **Use the BAND button to select the desired band.**
  (F1, F2, MW/LW)



AF Function Switching

This tuner/CD player's AF function can be switched ON and OFF. AF should be switched OFF for normal tuning operations.

- **Press the AF button to switch AF OFF.**
  "AF" disappears.
  Press the AF button again to switch AF ON.
  "AF" appears on the display.



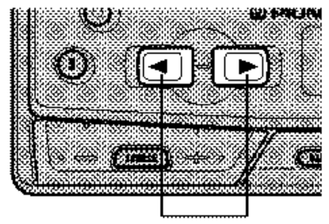
ClibPDF - www.fastio.com

Manual and Seek Tuning

Both Manual (step-by-step) and Seek (automatic) tuning are available.

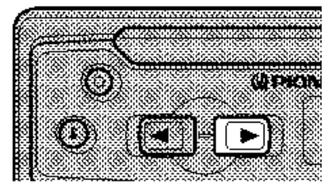
1. Press the (◄) and (►) buttons simultaneously to switch alternately between the Manual and Seek tuning modes.

The "MANU" indicator lights when Manual tuning is selected and turns OFF when Seek tuning is selected.

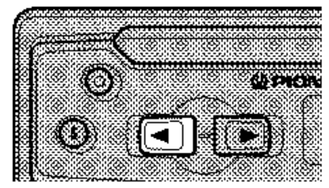


2. Press the (►) button to tune the receiver to a higher frequency.

MANU ON (Manual tuning):
The frequency changes step by step.
MANU OFF (Seek Tuning):
The tuner automatically seeks out and receives broadcasting stations.



- **Press the (◄) button to tune the receiver to a lower frequency.**



Local Seek Tuning

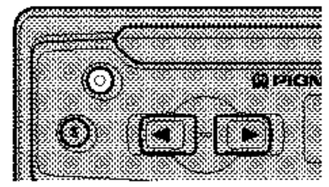
This mode selects only stations with especially strong signals.

To Select Local Mode

- **Press the Local button to enter the Local mode.**

"LOC.S" indicator lights.

To cancel the Local mode, press the Local button again.



Adjusting Local Seek Sensitivity

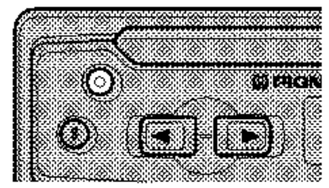
The Sensitivity can be adjusted in 4 steps for FM and 2 steps for MW/LW.

1. Depress the Local button for 2 seconds or longer.

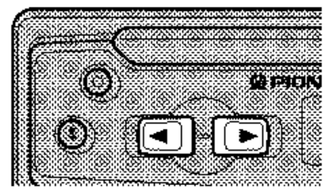
The current Local Seek sensitivity (eg. "LOC-2") is displayed.

Repeat to switch in and out of the Local Seek Sensitivity setting mode.

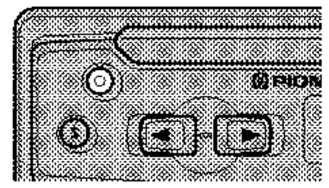
The display reverts to the previous indication after 5 seconds of inactivity.



2. Use the (◄) button or the (►) button to raise or lower the sensitivity of Local Mode Seek tuning.



3. Press the Local button to return normal display.



ClibPDF - www.fastio.com

Audio Adjustment

The audio modes are selected for adjustment with the S button. Volume adjustment is the default mode. When another mode is selected for adjustment, the setting returns to the Volume mode after 8 seconds.

Volume Adjustment

- **Press the (+) button or the (–) button repeatedly to raise or lower the volume.**

  The display shows low to high volumes from "VOL 00" to "VOL 30."

  Note: Holding down the buttons increases or decreases the volume level more rapidly.

Change the Setting Mode

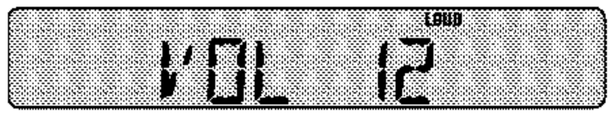
Each time the S button is pressed, the display message and the functions of the (+), (–), (◄) and (►) buttons change in the following order:

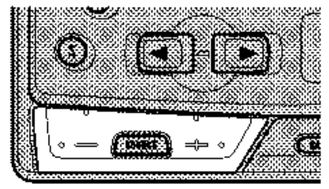
F. I. E. mode → Fader/Balance → Bass/Treble → Loudness.

Using the F. I. E. function

The F. I. E. (Front Image Enhancer) function is a simple method of enhancing front imaging by cutting mid- and high-range frequency output from the rear speakers, limiting their output to low-range frequencies.

Note: When the F. I. E. function is deactivated, the rear speakers output sound in all frequencies, not only bass sounds. Reduce the volume before disengaging F. I. E. to prevent a sudden increase in volume.

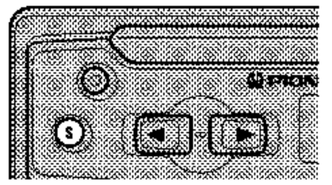




1. **Use the S button to select the F. I. E. mode.**

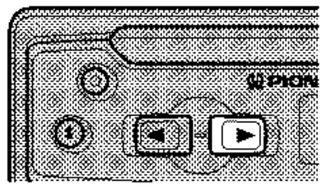
   "FIE OFF" appears on the display.

   After adjustment use the S button to return to the normal display.



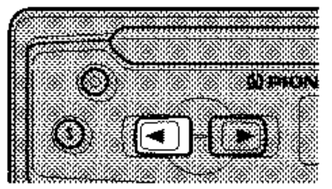
2. **Press the (►) button to activate the F. I. E. function.**

   "FIE ON" appears and "FIE" indicator lights on the display.



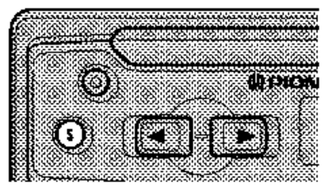
- **To cancel the F. I. E. function, press the (◄) button.**

  The display message returns to "FIE OFF".



3. **Use the S button to select the Fader/Balance mode.**

   This function adjusts the front and rear speaker volumes for better balanced listening.



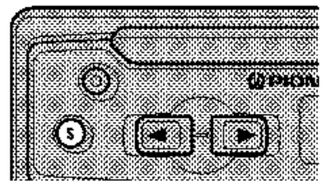
Balance Adjustment

The function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

1. **Use the S button to select the Fader/Balance mode.**

   "FAD" or "BAL" appears on the display.

   After adjustment use the S button to return to the normal display.



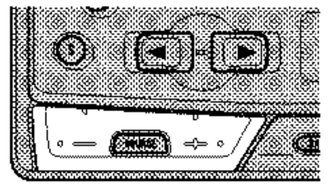
ClibPDF - www.fastio.com

Audio Adjustment

2. Press the (+) button or the (–) button to shift the balance progressively to the front or rear speakers.

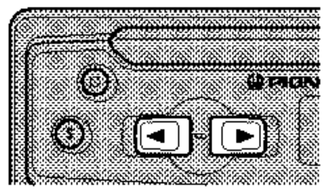
"FAD F15" ~ "FAD R15" is displayed as it moves from front to rear.

Note: "FAD 0" is the proper setting when 2 speakers are in use.



3. Press the (◄) button or the (►) button to shift the balance to the left or right speaker, respectively.

"BAL L9" ~ "BAL R9" is displayed as it moves from left to right.



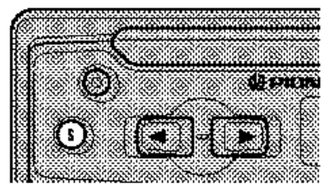
Bass/Treble Adjustment

This tuner/CD player is equipped with two tone adjustment modes, the Bass Adjustment and Treble Adjustment modes.

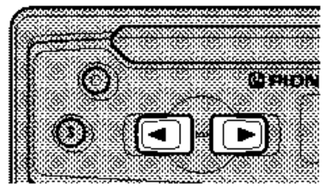
1. Use the S button to select tone adjustment mode.

"BAS" or "TRE" appears on the display.

After adjustment use the S button to return to the normal display.

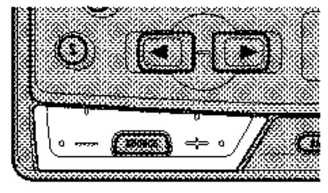


2. Press the (◄) button or the (►) button to select "Bass Adjustment mode" or "Treble Adjustment mode".



3. Press the (+) button or the (–) button, respectively, to increase or decrease the intensity of the bass or treble, whichever is selected.

The display shows "+6"–"–6".



4. Repeat steps 2 – 3 above for the other Bass or Treble Adjustment mode.

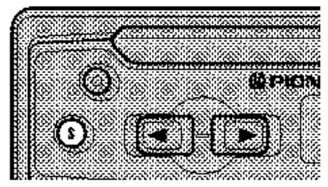
Loudness Adjustment

The Loudness function compensates for deficiencies in the low and high sound ranges at low volume.

1. Use the S button to select the Loudness adjustment mode.

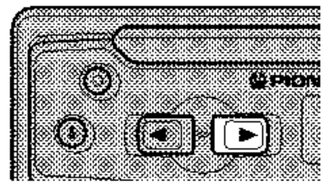
"LOUD OFF" appears on the display.

After selection use the S button to return to the normal display.



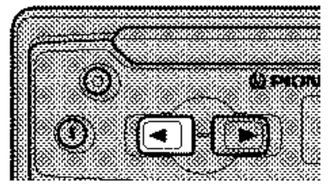
2. Press the (►) button to activate the Loudness function.

"LOUD ON" appears on the display.



- **To cancel the Loudness function, press the (◄) button.**

  The display message returns to "LOUD OFF."



ClibPDF - www.fastio.com

What is RDS?

RDS (Radio Data System) is a system for transmitting data signals along with FM programs. These data signals, which are inaudible, provide a variety of features such as: program service name, program type display, traffic announcement standby, automatic tuning, and program type tuning, intended to aid radio listeners in tuning to a desired station.

Notes:

1. RDS service may not be provided by all stations.
2. RDS functions, like AF and TA, are only active when your radio is tuned to RDS stations.

Program Service Name Display

With this function, the names of networks/stations providing RDS services replace the frequency on the display a few seconds after they are tuned in.

Displaying the Frequency

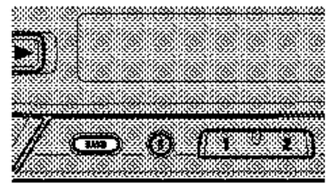
- **Hold down the BAND button for 2 seconds or longer.**

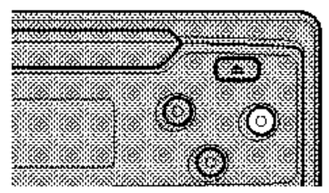
  The frequency of the current station is displayed until the button is released.

Displaying PTY Information

- **Press the TA button for 2 seconds or longer.**

  PTY information for the currently tuned station appears on the display for 8 seconds.





AF Function

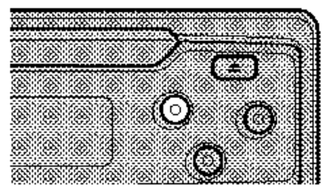
The AF (Alternative Frequencies search) function is used to search for other frequencies in the same network as the currently tuned frequency. It automatically mutes the sound and retuneds the receiver to another frequency in the network which is broadcasting a stronger signal when there are problems with reception of the currently turned station or better reception is possible on a different frequency.

Activating/deactivating the AF Funtion

AF is set to ON by default.

- **Press the AF button to turn AF to OFF.**

  The "AF" indicator light is extinguished.



- **Press the AF button again to turn AF back ON.**

  The "AF" indicator lights.

  Notes:

  1. When you recall a preset station, the tuner may update the preset station with a new frequency from the station's AF list. No preset number appears on the display if the RDS data for the station reveived differs from that for the originally input station.
  2. Sound may be temporarily interrupted by another program during an AF frequency search.
  3. AF can be switched ON or OFF independently for each FM band.
  4. AF tunes the receiver only to RDS stations when you use Seek tuning or BSM Auto Memory with the "AF" indicator ON.
  5. When the tuner is tuned to a non-RDS station, the "AF" indicator flashes.

Using RDS Functions

PI Seek function

The tuner searches for another frequency broadcasting the same programing. "PI SEEK" appears on the display and the radio volume is muted during a PI Seek. The muting is discontinued after completion of the PI Seek, whether or not the PI seek has succeded. If the PI seek is unsuccessful, the tuner returns to the previous frequency.

Auto PI Seek

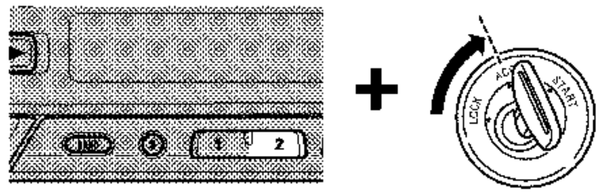
If the tuner fails to locate a suitable alternative frequency or the broadcasting signal is too weak for proper reception, the PI Seek will automatically start.

Preset Station PI Seek

When preset stations cannot be recalled, as when traveling long distances, the unit can be set to perform PI Seek also during preset recall. The default setting for PI Seek is OFF.

- **To switch PI Seek ON, hold down button 2 while turning the ignition key from OFF (Lock) to ON (ACC).**

  To switch PI Seek OFF, repeat the preceding operation.



REG Function

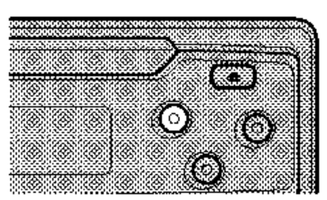
When AF is used to retune the tuner automatically, REG (regional) limits the selection to stations broadcasting regional programming.

Activating/Deactivating REG

The REG function can be turned ON or OFF independently for each FM band.

- **To activate REG, press the AF button for 2 seconds or longer in an FM band.**

  The "REG" indicator lights.

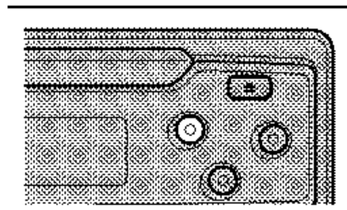


- **To exit the REG mode, press the AF button for 2 seconds or longer again.**

  The "REG" indicator is extinguished.

  Notes:

  1. Regional programming and regional networks are organized differently depending on the country (i.e., they may change according to the hour, state or broadcast area).
  2. The preset number may disappear on the display if the tuner tunes in a regional station which differs from the originally set station.



TA Function

The TA (Traffic Announcement standby) function to let you tune in traffic announcements automatically, no matter what source (tuner or built-in CD player) you are listening to. The TA function can be activated for either a TP station (a station that broadcasts traffic information) or an EON TP station (a station carrying information which cross-references TP stations).

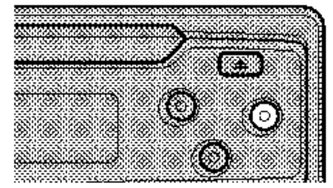
Activating/Deactivating the TA Function

- **Tune in a TP or EON TP station.**

  The "TP" indicator lights when the tuner is tuned to a TP station, and both the "EON" and "TP" indicators light when it is tuned to an EON TP station.

- **Press the TA button.**

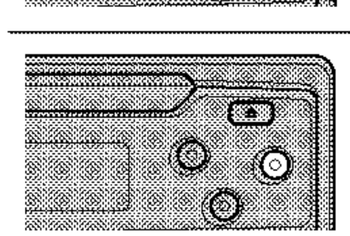
  The "TA" indicator lights, indicating that the tuner is waiting for traffic announcements.



- **Press the TA button again when no traffic announcement is being received to deactivate the TA function.**

  Notes:

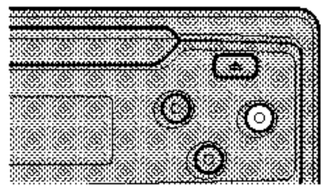
  1. Only the (+), (–), TA, AF and SOURCE buttons can be used during traffic announcement reception.
  2. The system switches back to the original source following traffic announcement reception.
  3. The TA function can be activated from the built-in CD player mode if the tuner was last set to the FM band but not if it was last set to the MW/LW band.
  4. If the tuner was last set to FM, turning on the TA function lets you operate other tuning functions while listening to a CD.
  5. Only TP or EON-TP stations are tuned in the Seek Tuning mode when the "TA" indicator is ON.
  6. Only TP or EON-TP stations are stored by BSM when the "TA" indicator is ON.



Canceling Traffic Announcements

- **Press the TA button while a traffic announcement is being received to cancel the announcement and return to the original source.**

  The announcement is canceled but the tuner remains in the TA mode until the TA button is pressed again.

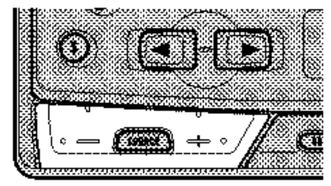


Adjusting the TA Volume

When a traffic announcement begins, the volume adjusts automatically to a preset level to enable you to hear the announcement clearly.

- **Using the (+) or (–) buttons to set the volume by adjusting it during traffic announcement reception.**

  The newly set volume is stored in memory and recalled for subsequent traffic announcements.



TP Alarm function

About 30 seconds after the "TP" or "EON" indicator is extinguished due to a weak signal, a 5 second beep sounds to remind you to select another station.

- **If you are listening to the tuner, tune in another TP station.**

  In the built-in CD player mode, the tuner automatically seeks out the TP station with the strongest signal in the current area 10 (or 30)* seconds after "TP" disappears from the display.

*** Time taken before Seek begins.**

TA function ON	10 seconds
TA, AF functions ON	30 seconds

PTY Function

The PTY function enables you to select stations by the type of programming they broadcast (PTY Search). It also provides automatic tuning for emergency broadcasts (PTY Alarm).

Note:

1. PTY code program types are as follows:
   1. NEWS: News.
   2. AFFAIRS: Current affairs.
   3. INFO: General information and advice.
   4. SPORT: Sports programs.
   5. EDUCATE: Educational programs.
   6. DRAMA: All radio plays and serials.
   7. CULTURE: Programs concerned with any aspect of national or regional culture.
   8. SCIENCE: Programs about nature, science and technology.
   9. VARIED: Light entertainment programs.
   10. POP MUS: Popular music.
   11. ROCK MUS: Contemporary modern music.
   12. EASY MUS: Easy listening music.
   13. L. CLASS: Light classical music.
   14. CLASSICS: Serious classical music.
   15. OTH MUS: Other types of music, which can't be categorized.
   16. WEATHER: Weather reports/ Meteorological information.
   17. FINANCE: Stock market reports, commerce, trading etc.
   18. CHILDREN: Children's programs.
   19. SOCIAL: Social affairs programs.
   20. RELIGION: Religion affairs programs or services.
   21. PHONE IN: Phone in based programs.
   22. TOURING: Travel programs, not for announcements about traffic problem.
   23. LEISURE: Programs about hobbies and recreational activities.
   24. JAZZ: Jazz music based programs.
   25. COUNTRY: Country music based programs.
   26. NAT MUS: National music based programs.
   27. OLDIES: Oldies music, 'Golden age' based programs.
   28. FOLK MUS: Folk music based programs.
   29. DOCUMENT: Documentary programs.
2. If a PTY code of zero is received from a station, "NONE" will be displayed. This indicates that the station has not defined its program contents.
3. If the signal is too weak for this product to pick up the PTY code, "NO PTY" will be displayed.

ClibPDF - www.fastio.com

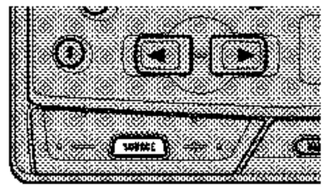
Using the Built-in CD Player

- **To stop CD playback, press the SOURCE button to select tuner or turn the source OFF.**

  When the built-in CD player is selected again, playback begins at approximately the same place (track/playing time).

Precaution:

* Inserting more than one disc at a time may damage the built-in CD player.
* Discs left partially inserted after ejection may incur damage or fall out.
* If a disc cannot be inserted fully or playback fails, make sure the recorded side is down, push the Eject button and check the disc for damage before reinserting it.
* If a CD is inserted with the recorded side up, it will be ejected automatically after a few moments.
* If the built-in CD player cannot operate properly, an error message (such as ERROR-14) appears on the display.



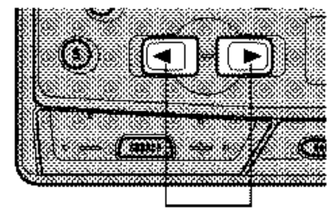
Track Search and Fast-forward/Reverse

Switching the Mode

- **Press the (◄) and (►) buttons simultaneously to switch between "MANU" indicator ON and OFF.**

  When performing a Track Search, switch the "MANU" indicator OFF.

  When performing Fast-forward/Reverse operations, switch the "MANU" indicator ON.

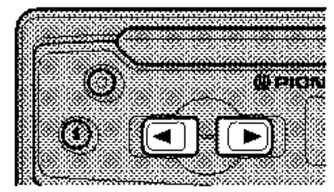


Track Search

This feature permits you to select a specific track on the CD by number.

- **Press the (◄) button or the (►) button to reverse or advance track by track.**

  Hold down the button continuously for high-speed forward or reverse track searching. The track number and playing time change appropriately on the display.



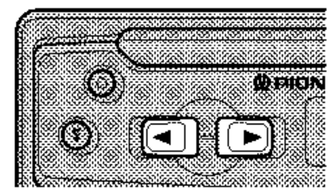
Fast-forward/Reverse

This feature enables you to advance or reverse at high speed between tracks.

- **Press the (◄) or (►) button to reverse or fast-forward through tracks.**

  When the beginning or end of a track is reached, playback skips to the next track. The track number and playing time change appropriately on the display.

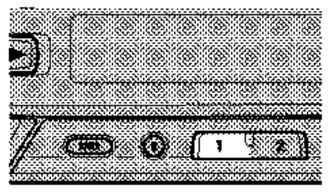
  Note: The audio is audible as a high-pitched screeching during fast-forward and reverse.



ClipPDF - www.fastio.com

Pause

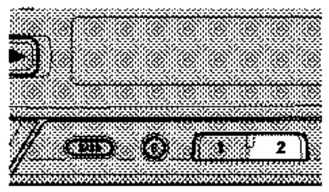
- **Press button 1 to stop playback temporarily.**
  "PAUSE" is displayed.
  Push the button again to restart playback.



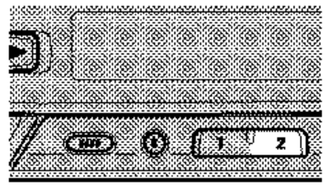
Built-in CD Player Repeat Modes

The built-in CD player offers two repeat modes: Disc Repeat (normal play), the default mode, and One-track Repeat.

- **To select One-track Repeat, press button 2.**
  "RPT" appears on the display.
  Note: When Track Number Search or fast forward/reverse is performed, the mode returns to the default Disc Repeat mode (normal play).



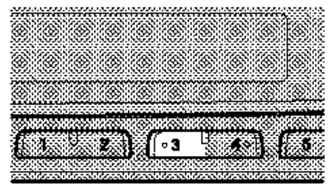
- **Press the button 2 again to return to the Disc Repeat mode (normal play).**
  "RPT" disappears.



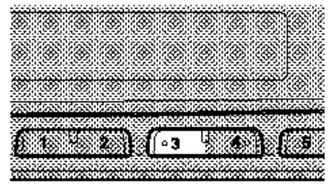
Random Play

The Random Play mode plays the tracks on a CD in random order for variety.

- **To enter the Random Play mode, press button 3.**
  "RDM" appears on the display.



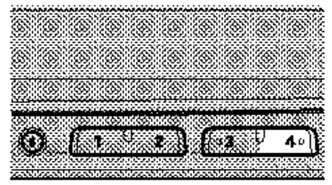
- **Press button 3 again to cancel Random Play.**
  Note: Since playback is random, the same track may be repeated consecutively.



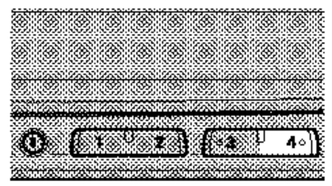
Scan Play

Scan Play plays the first 10 seconds or so of each track on a CD in succession.

- **Press button 4 to start Scan Play.**
  "SCAN" appears on the display.



- **Push button 4 again to cancel Scan Play when you hear a track you are want to listen to.**
  Playback of the current track continues.
  Note: Scan Play is canceled automatically after all the tracks on a disc have been scanned.



ClibPDF - www.fastio.com

Specifications

General

Power source ..... 14.4 V DC (10.8 — 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions
(mounting size) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 22 (D) mm
Weight ..... 1.5 kg

Amplifier

Maximum power output ..... 35 W × 4
Continuous power output ..... 22 W × 4
(DIN45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/ 1 kΩ
Tone controls
(Bass) ..... ±12 dB (100 Hz)
(Treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(volume: –30 dB)

Specifications

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency characteristics ..... 5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz)(IEC-A network)
Dynamic range ..... 90 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.5 — 108 MHz
Usable sensitivity ..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 — 1,602 kHz
Usable sensitivity ..... 18 µV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 — 281 kHz
Usable sensitivity ..... 30 µV (30 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.